Gleanings in Bee Culture

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John G. Jessup

Spring Management

How It Is Carried Out in Central Iowa

By John G. Jessup

Bees like most insects respond to their environment. Give them every condition needed to multiply rapidly and they will. But if one of the essentials is lacking, they will not. So, as each colony is examined, we have always in mind three questions.

First, is the queen good enough to lay 2000 eggs day after day? We know some queens are good for two and three years but we also know some queens fail after a few weeks. This makes it necessary to watch for failing queens regardless of age and to be prepared to replace them on short notice.

Secondly, do the bees have ample food? This means pollen and water as well as honey. We let the bees carry their own water, believing we have done our duty if a supply is available near the apiary. A colony will reduce brood rearing whenever the supply of either honey or pollen becomes low. Only when there is an abundance, do they use it without stint. For that reason 15 pounds or more of honey should be in the hive at all times during the spring. Whenever spring brood rearing is reduced it is cutting down the amount of surplus honey we take off in the fall.

Thirdly, is there plenty of good worker comb? All commercial beekeepers appreciate this but it is surprising how many beginners will pay five dollars for a hive only to let the bees build their own comb as they will. This results in a large percent, often as high as 50, of drone comb of such construction that the frames can not be removed. It is absolutely essential to have combs drawn from full sheets of worker foundation reinforced by wire. Even such combs are constantly being changed by the bees. Frames developing patches of drone cells should be removed from the brood nest and replaced with perfect combs or full sheets of foundation.

Now consider the HOW of providing these essentials. Let us assume we have some colonies with poor queens, some short of honey, pollen, or both, and some poor combs containing patches of drone cells. Regardless of fall management we always find a few such colonies each spring. Anticipating this, we have stored away for use in the spring, one or two frames of sealed honey and another frame or two of pollen for each colony in the yards. In the

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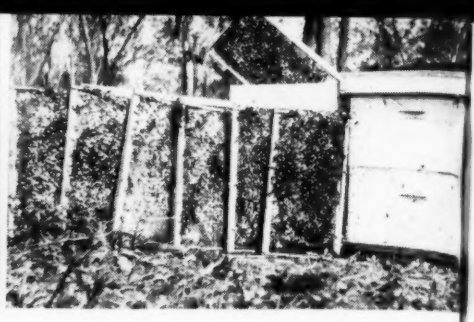
An apiary facing South and well protected against cold winds.



It pays to have ample stores, good queens, and good combs.

spring some colonies will have plenty of stores to carry them through to the honey flow, so our feed stock will provide three or four frames for some colonies needing it. Without this reserve honey for feeding it is necessary to line up a supply of sugar as it will no doubt be needed in May. However, even with twelve-cent honey and six cent sugar we prefer to feed sealed honey. It is a lot less work and much more satisfactory.

During the beekeeper's long winter rest, so often heard about, we have sorted all combs, rendered up the drone comb and replaced it with full sheets of foundation, placed all combs of pollen by themselves, put all old black brood combs in another stack, and all new white combs together. And as the combs are sorted the frames and supers are scraped of propolis and burr comb, and those needing paint are given a coat before they are stored away for spring use. The need of young queens is anticipated by placing an order with a southern breeder for a sufficient number to replace from 25 to 50 per cent of those being wintered. Delivery is set for the time we think apples will be in bloom, the last week in April.

We feel it necessary to get into the bees by April 15 or 25. At this time the packing is removed, dead bees cleaned from the bottom boards, equipment from dead colonies closed mouse and bee tight, and drone layers united with queen-right colonies. Hives with the second story full of brood and bees are reversed, the upper story placed on the bottom board and the lower body above. This stimulates the queen to expand her brood nest. Weak colonies with two or three frames of brood are not reversed. All colonies should have ample stores at this time but some may be short. In such cases empty frames are exchanged for frames of honey from colonies having it to spare. And that takes care of the examination at the time of unpacking.

Our southern reared queens are due the last of April, and we must be ready to introduce them as soon as they arrive. Introducing 25 makes a good day's work along with the other things to be done. It may be raining the day they arrive so we do not like to have queens come in that number oftener than every other day. We have prepared — this also during our winter rest period—ready to use when the queens come, hive bodies containing two frames of pollen in the center, with a frame of honey on each side of the pollen and filled out with good dark brood combs as long as they are available, or light combs, or foundation. When the queens arrive we take with us to the bee yard a prepared hive body of combs, pollen, and honey for each queen; and also two extra hive bodies of solid honey to use, feeding any of the old colonies that may need it. Each colony in the yard is worked, selecting as many of the strongest colonies for division as we have queens to introduce. As a rule about one third are divided. We do not like to divide a colony with less than five frames of brood, but by the last week of April at least a third of our colonies run well over this some having ten and twelve frames.

The nucleus for the queen is made by taking three frames of sealed brood and adhering bees, placing them between the pollen frames in the prepared hive body, using the old dark empty combs to replace the brood taken from the colony. Care is taken to leave the old brood nest compact, placing the empty combs at one side. In this operation we prefer to take time to find the queen, making sure she is left in the old hive. Now, with the nucleus made, the old hive is closed, with most of the brood in the lower body —again the reversing of the upper and lower bodies may be the easiest way to accomplish this.

The increase is placed on an empty bottom board to replace winter loss, and the queen introduced by removing the cardboard covering the candy end and placing the cage between the top bars of the frames containing brood, in such a way that the bees in the hive can reach the screen. The entrance is reduced to ⅜x1 inch. The nuclei are placed on top of the old colonies, right on the inner cover, the hole in the inner cover having been closed with a wood block. The body is pushed back far enough to provide a ⅜ inch entrance at the rear but none at the front. A strip is tacked to the back of the inner cover to provide an entrance at the back corner ⅜x1 inch.

If a yard contains more strong colonies than are needed for divisions, and they fill the two story hive, a third story of dark combs is put on with two or three frames of pollen in the center and a frame of honey if needed. And, of course, we have given a frame of honey to any colony having less than 15 pounds.

Not less than ten days and not over two weeks later, it is time to work the bees again. It will be about May 10th and unless fruit bloom and dandelion have produced well a lot of feeding will be necessary. Many colonies should be ready for a super of dark combs with pollen and honey. An easy way to feed is to put the combs of honey in the super added. The two lower bodies are reversed again if the queen is laying in the upper one. All nuclei are checked on this visit to see if the queens were accepted. The nuclei failing to accept their queens will have sealed cells. We just leave them alone and have a home-reared queen in a couple of weeks. A reserve of good young queens are now on hand to replace any failing queens. From now on through the season when a failing queen is found she is killed, and the nucleus placed on top. A newspaper between does no harm if you have one—we seldom do.

If the old queen can't be found and no young queen has been reared, we unite the nucleus with it anyway putting the young queen above. She will probably be accepted and the old queen killed. But if a virgin has been reared by the old colony we expect her to kill the laying queen, so never try to introduce a queen in such a case but let them finish the job of rearing their own.

When fruit bloom and dandelion are over we find the greatest need for feeding colonies short on stores. We keep giving one, two, or three frames of honey wherever needed. When the honey supply is exhausted sugar syrup will have to be used. A ten-pound pail of 50/50 syrup inverted over the inner cover hole is the next best thing. Open feeding in cans or troughs is always a last resort to prevent starvation for the last few days of dearth just before the honey flow begins. Some weak colonies may well exchange a frame of their honey for a frame of sealed brood from a strong colony.

Now having each colony headed by a good queen, supplied with plenty of food and on frames of good worker combs, and with ample room for expansion, we should have little if any swarming—theoretically. Swarming is a big subject and if you have continued to this point the odds are you will be willing to call it enough and take up that subject some other time.

Perry, Iowa.

An apiary site with hives partially shaded from the sun makes work more pleasant, especially during hot summer days

Does Reversing *Prevent* Swarming?

Should It Be Practiced Indiscriminately?

By Grant D. Morse, Ph. D.

A reader asks, "How valuable is 'reversing' as a swarm control meaure?"

Personally, I don't place much confidence in any one manipulation. As I see it, the operator who wants to prevent swarming should seek first, to know colony behavior as evidence of colony condition, and second, to adjust his treatment to its needs in terms of that behavior.

Here is an illustration of what I mean: If one colony, or a small number among many, starts to build queen cells early in the season long before the main honey flow, "reversing" as a general method of treatment would probably be out of place. Why? Because that behavior by the colony probably means that there is some condition present in the colony that needs correction. One reason for building queen cells at such a time might be that the workers regard their queen as needing to be replaced by another. I'm not saying that what began as supersedure may not end in swarming. Nevertheless, the operator needs to know, or at least be reasonably able to guess at, the original cause for the building of queen cells in that colony. Then his treatment of that colony has the possibility of being correct. Or, let us say, a colony builds queen cells toward the end of the honey flow period. That behavior too calls for understanding, else the treatment is not likely to be appropriate.

Of course, even if I knew all the facts about colony behavior—which I certainly do not—space does not permit a complete treatment here. But, generally speaking, swarming inclinations vary from year to year, and from one part of the country to another. Qualified observers have repeatedly stated, however, that most swarming takes place during the early part of the season—during perhaps, the first half of the main honey flow and for a short time preceding that flow. Why? The most obvious answer is that a swarm has the best chance of success then.

Accordingly, the beekeeper who wants to avoid excessive swarming tries to have his colonies in such condition that swarming is discouraged. He plans, too, for frequent examination of colonies during the swarming period and suits his manipulations to the needs of the situation.

For a period shortly preceding the chief honey flow and during approximately the first half of the chief flow the operator commonly needs to examine his colonies every ten days or oftener in order to check losses by swarming out. At such times each colony will occupy not less than two hive bodies. If the operator wants to save time and effort he can somewhat accurately determine whether queen cells are present by lifting up the upper hive body at the back, for bees commonly build such cells between the two hive bodies, but not always. The degree of care spent in making the examination is usually determined by the amount of time the operator can afford.

When he first finds a colony building cells at this period in preparation for swarming, he may look to see to what extent the queen has filled the upper hive body with eggs, and whether she has similarly used the lower hive body. If the upper body is crowded and the lower one is not —as is often the case at this time of year—he may elect to forestall the building of cells in the other colonies in that yard by reversing, that is, interchanging places with upper and lower hive bodies. What does this accomplish? It gives the queen the opportunity to lay her eggs in the upper part of the brood nest—a choice which seems to be the preference of most queens. Some seem to be not so prejudiced. I believe that the location of honey and pollen stores influence the practice of the queen to a greater degree than may be commonly noted.

Does the reversing process accomplish anything more than noted above? The suggestion I have to make is not based on scientific experimentation so you may feel free to discount it, but I believe the reversing manipulation jars the colony out of its complacency, that is, disorganizes it, thereby inclining it to swarm less readily. Also, as to whether this manipulation actually inclines more young bees to enter

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Comparative Beekeeping *as a Hobby*

By Milton E. Felt

Most people raise bees with a crop of honey as the ultimate reward. It is quite possible that some of the more curious and less practical people could raise them just as they raise flowers, to compare the characteristics of the different races of bees. Of this curious and impractical class I fear I am one, for while I would not object to securing a small amount of honey, the bees themselves furnish me with sufficient amusement to be ample reward for keeping them.

My interest has carried me into trying all the varieties it is possible to obtain. **I have had several strains of Italians,** both light and dark, Caucasians from several different breeders, and Carniolans from a few other breeders. In just the Italians alone there is found great differences in characteristics, from gentleness to absolute viciousness, some Italians being so very ugly that it was impossible to get within 30 feet of their hive without being greeted with numerous stings. I am of the opinion that these bees which are so cross, if given a chance to work unmolested, would produce more than the gentler strains—however, I did not give them a chance to prove their worth in this respect. No doubt the ugliest bees I had were not pure Italians, for the man from whom I bought them had not brought in new blood in over 20 years, yet their appearance was every bit Italian.

For a number of years I have had Caucasians, and here on Long Island where we have hot summers and cold damp winters they stand the weather remarkably well. They work fully as well as the Italians, live over winter without the slightest trouble, and while they are inclined to stick the frames together a bit more than Italians it is not too objectionable in view of their other qualities. By far the greatest point in their favor is their gentleness for they can be handled under any condition with little or no smoke and no protection. Where there are children around the hives or where they are kept near fussy neighbors, these are the bees to keep.

Upon reading Dr. Park's article, "Is There a Best Race of Bees?" **I decided to obtain a few hives of Carniolans.** Due to Dr. Park's article and the results of his experiment with the three races, I must say I was well sold on them before I bought them. I kept two hives of Carniolans from two different breeders, close to the house with a hive of Caucasians so that I could keep them under constant observation. At the end of a month I was even more sold on the Carnolians than before I got them. Their color, to my mind, is more attractive than either Italians or Caucasians, and they have all the gentleness of the Caucasians and do not propolize so badly as the Caucasians. They are hard workers, flying early at morn until late at night. Unfortunately the season was very dry and I had started quite late with two-pound packages so that feeding was necessary to carry them over the winter.

One of the breeders who shipped me Carniolans had not kept his bees pure, and the bees were more Caucasian than Carniolan both as to color and tendency to propolize. However, the bees were gentle and excellent workers building up faster than any bees I have ever had.

Most writers seem to be of the opinion that the color of the yellow Italian is more desirable from the beauty standpoint than the darker bees. But everyone that I know that has seen a frame covered with Carniolans agree that it is much more attractive than any Italians.

What I had read of the American Black Bee interested me. They seemed to have some quite desirable characteristics. Last year while looking over some flowers at a relative's place on the eastern part of the Island, my attention was attracted to some of the bees working these flowers. They appeared quite a little larger than any bees I had ever seen before, they were inky black and quite shiny. They were too dark to be either Caucasians or Carniolans. In this section there is only one beekeeper and he has Italians. The country for miles around is mostly wood land. Apparently these were the real American Black Bee and had lived in these trees for years. Apparently they have withstood our damp climate and the diseases during all of these years and have thrived on it due to their large size. I decided then I

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Producing More Wax by Using Empty Frames

By M. J. Deyell, Mgr. Root Company Apiaries

The April, 1942, Gleanings, page 213, carries an article entitled "Saving and Producing Beeswax," in which the writer makes a number of suggestions for producing more wax. One plan is to use supers containing frames from which combs have been cut. That method may be all right when one does not have time to equip frames with full sheets of foundation wired, but the bees are likely to build combs criss-cross in the empty frames unless a margin of comb is left all around and in order to separate the honey from the wax, the mass of combs then has to be cut out and mashed into a radial extractor with screens on the bottom and sides, after which the honey is thrown out by centrifugal force.

Alternating Empty Frames With Drawn Combs

During the past two seasons because of a shortage of help and materials, I have been experimenting along a slightly different line, using five frames containing straight wired drawn combs and four empty frames from which combs have been cut. The drawn combs are alternated with the empty frames, a drawn comb next to each side of the hive, in every case.

When I tried this I wondered what would happen. The accompanying picture gives the answer. The bees built straight combs in the empty frames but most of the new comb was drone, as we would expect.

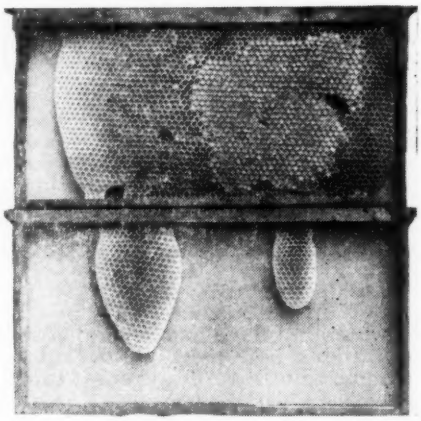
The bees started this drone comb in the very center of each frame, and the midrib was exactly where the midrib of the removed comb had been. I believe the bees were guided in the building of the new comb by the margin of the previous comb left on the inside of the frame. The empty frames between two straight drawn combs caused the bees to build straight combs.

A number of the combs built occupied the entire frames, touching the top bars, end bars, and in most instances, the bottom bars. The upper picture shows a little space at one end. The fall flow stopped before the bees completed this comb.

Hauling and Extracting Unwired Combs

I naturally wondered if these unwired combs would stand up while the supers were hauled from the apiary, a distance of six miles, to the extracting room and whether they would go through the extractor without breaking. I handled the supers carefully, also the combs while uncapping them. I extracted the honey out of a number of these combs with a two-frame extractor without breaking any. I also put some of them through a 45-frame extractor and comparatively few were broken. Those that did break yielded some wax so I really didn't lose anything.

I hope to use the unwired combs this year and I will then see whether or not the bees will fill them more quickly than wired combs consisting of worker cells.



The bottom of this picture shows how bees started to build drone comb in an empty frame placed in a super between two drawn combs, during a honey flow. These two pieces of comb are eventually joined together. The upper part of the picture shows a straight-comb almost filling the frame. In due time the comb will completely fill the frame, if the honey flow continues. These combs were taken from supers at the close of a fall honey flow in October, 1944.

Unwired Combs From Starters

A few years ago, I had some experience producing bulk comb honey. Shallow extracting supers with starters consisting of thin super foundation without wire were used. The combs that contained cells of pollen were run through a radial extractor. We wondered if they would stand up under this ordeal. They did. Of course it was not so surprising that shallow combs would

go through the radial extractor unbroken but we did not suppose that unwired standard combs could be put through a radial extractor. This experience of the past season proves that they will under conditions in this locality.

Do Bees Prefer Drone Comb For the Storage of Honey?

In beekeeping literature one finds drone comb referred to as storage comb. During the years, we have noticed that when small patches of drone comb occur in combs consisting mainly of worker cells, in supers the bees will fill the worker cells first and small patches of drone cells are left to the last, but if the honey flow is heavy and the bees need all available space, they will eventually fill the drone cells. Now, whether they prefer combs consisting entirely of drone cells to combs consisting entirely of worker cells when these two kinds of combs are alternated in a super, I do not know. I hope to find out this season, if we have a honey flow here.

We have observed, as have others, that a prime swarm put into a hive with starters, instead of full sheets of foundation, will, during a heavy flow, build enough worker comb for the queen to lay a normal amount of worker eggs.

The bees will then build drone comb. On the other hand, during a light honey flow bees are likely to build worker comb, especially a nucleus or colony that is below par in strength.

I have observed that bees seldom, if ever, put pollen in drone cells. Queens will sometimes leave brood chambers below and go up into supers (if no queen excluders are used) to lay unfertile eggs in patches of drone cells. Last fall when this experiment was tried I did not use queen excluders and no queens were found to occupy these drone combs in supers. Possibly small patches of drone comb in worker cell combs, attract queens more readily than solid or full combs of drone cells in supers.

Is Drone Comb Stronger Than Worker Comb?

I tried to find out from the experts if the midrib of the drone comb is thicker than the midrib of worker comb. No one seems to know. Possibly some of you readers can give me the answer to this question. If the septum or midrib of drone comb is thicker and tougher than that of worker comb, possibly this is one reason why these combs did not break in the honey extractors.

Another Advantage of Using Empty Frames

During the heavy flow a considerable amount of wax is secreted by the worker bees. The presence of these empty frames would help to keep the wax secreters and wax builders from running out of a job. Why not work the bees to full capacity, if such is feasible? This might possibly be a swarm control measure.

Empty Frames Furnish More Ventiiation

It is easy to see that a super containing five drawn combs and four empty frames, alternated, gives adequate ventilation, especially after the super is first put on. Ventilation is quite necessary, especially during the very hot months. **This too may be a swarm control measure.**

I think it is an advantage to shove all of the nine frames close together when the super is first put on, dividing the extra space at the outside of each outside frame. Later on, after the bees have begun building comb in the empty frames, they can be properly spaced.

It should be understood that I am not recommending this seemingly slip-shod method of producing extracted honey and wax. Time will tell whether or not it has any advantages or serious disadvantages over the orthodox method of producing extracted honey in good wired combs consisting mainly of worker cells. If I had plenty of such combs I wouldn't think of resorting to the method described. However, from the standpoint of producing more wax also with the possibility of reducing swarming, it would seem that this so-called slip-shod method may be worthy of at least a thorough trial.

It is my suggestion that a few colonies be set aside this coming season for the purpose of trying out the method described. To make the trial fair, one should set aside a certain number of colonies for experimental work then operate one-half of them for honey and wax production in the manner described and the other half in the orthodox manner in order to keep tab on the actual amount of honey and wax secured from each group.

Feeding a Dry Pollen Substitute to Bees

By W. E. Dunham

Department of Zoology and Entomology
The Ohio State University

For many years research workers have studied the nutritional requirements for various types of livestock. Specific grain concentrates have been developed containing known amounts of carbohydrates, fats, proteins, minerals, and vitamins for the most economical production of milk products, meats, and eggs.

Until very recently beekeepers have given little thought regarding the nutritional requirements of bees, but have leaned on "mother nature" to supply them. Sometimes "mother nature" has been kind, but perhaps as often, unkind. The maintenance of colony strength as well as the control of colony populations has been somewhat of a "hit and miss" proposition. Within certain limits, the beekeeper can, through efficient apiary management get fairly good results, but these results are not good enough if he is to capitalize on the full possibilities in beekeeping. It is true that the carbohydrate food constituent has been under the control of the beekeeper for many years. If the honey of the colony was consumed, the beekeeper could feed sugar syrup (pure carbohydrate). But as far as being able to control the protein, fat, mineral, and vitamin requirements of bees, we have been woefully neglectful.

Thanks to the foresighted research program of the Federal Bee Culture Laboratory, and more recently, the work of the Minnesota Experiment Station, these research institutions have developed a pollen supplement and substitute which goes a long way toward solving the nutritional problem.

Feeding a Dry Pollen Substitute*

We have been feeding bees the dry pollen substitute for the past three spring periods. The dry substitute is made up according to the recommendations of the Minnesota Experiment Station, namely, 4 parts by weight of a low fat (5-7 percent) and high protein (48-52 percent) soybean flour (expeller process) with 1 part by weight of dried skim

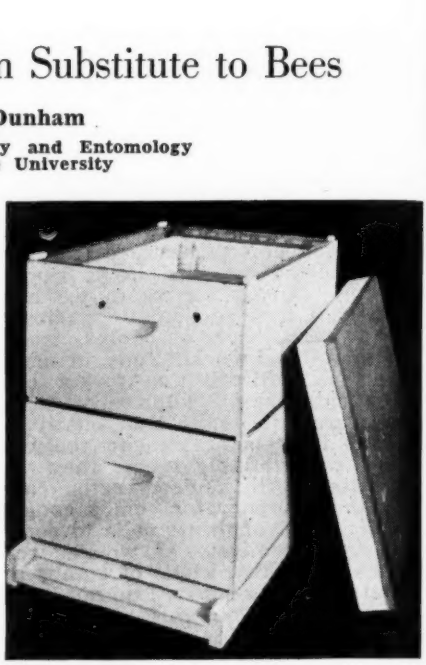
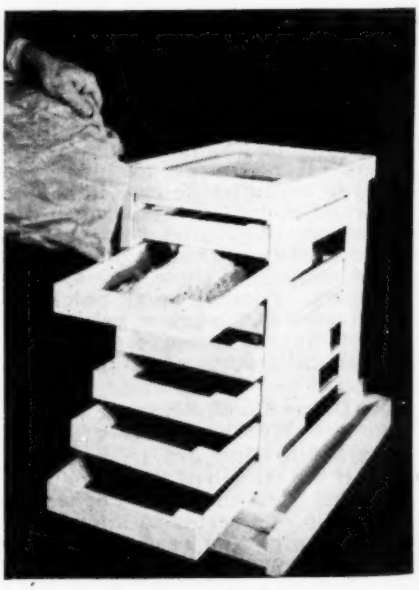


Fig. 1.—Dry feeder rack inside a two-story hive with ⅜ inch blocks at each corner. This allows more accessibility for the bees to reach the dry pollen supplement. Protection from sun and dew keeps material dry.

Fig. 2.—Tray in rack being filled with dry pollen supplement. For best results a large feeding area is necessary.



*A leaflet on the construction of a dry pollen feeder will be gladly mailed free upon request to the Division of Bee Culture, The Ohio State University, Columbus, Ohio.

milk. More recently the Brewers' yeast with the soybean flour has been used according to the directions of Dr. Haydak which involves using 9 parts of soybean flour and 1 part of Brewers' yeast. Late research work shows that the latter pollen substitute is better than the dried skim milk.

We have constructed permanent dry feeders which consist of a rack holding eight shallow trays (see Fig. 1.) A large feeding surface area is important for best results with this method of supplying a pollen substitute (see Fig. 2). Approximately eight square feet of feeding surface is desirable for every 20 colonies. The eight trays filled with the dry flour material hold about 15 pounds.

In feeding the dry pollen substitute it is absolutely necessary to keep it dry. Protection from rain or falling dew at night must be provided. The feeding rack which we have constructed sets on a 10 frame bottom board, two empty hive bodies are placed over the feeding rack and then an outer telescoping cover on the top hive body. To give more accessibility for the bees to reach the dry substitute in the trays, a ¼ inch block is placed under each corner of the hive bodies and under the outer cover (see Fig. 3). The entrance piece should be placed on the bottom board to prevent mice reaching the flour.

When the bees are working the dry feeders it is necessary to replenish the supply of dry pollen substitute in the trays at least every 7 to 8 days. At the beginning of the clover flow if there is any of the dry pollen substitute left in the feeders, it can be saved and stored in a dry place for use at another time.

Bee Activity on the Dry Feeders

During cold and rainy weather the bees are prevented from gathering the dry pollen substitute. However, it is amazing to observe the amount of activity in the dry feeders under rather unfavorable weather, such as misty, cloudy, and cool days. Before the early pollen becomes available, the bees gather the material in large numbers. When observing entrances of colonies, the bees returned loaded with pollen substitute at as rapid a rate as when a natural pollen flow prevails. As the early natural pollen becomes available the bees slow up their activity in the feeders and may actually desert them in preference to natural pollen.

Regarding the brood pattern of colonies during the time bees were gathering this material it can be said it appears normal. However, it should be mentioned that our colonies had natural pollen reserves within their hives to supplement the pollen substitute.

In the use of a pollen supplement or substitute whether fed in the "cake" or "dry" form I believe it is imperative to point out that beekeepers should not base their conclusion on one year's experience. For example, during the spring of 1943 and 1944 our early pollen sources were poor and bees consumed much more of the pollen substitute than during the past spring. This spring we had one of the earliest and longest early pollen flows that we have experienced for many years. Bees gathered

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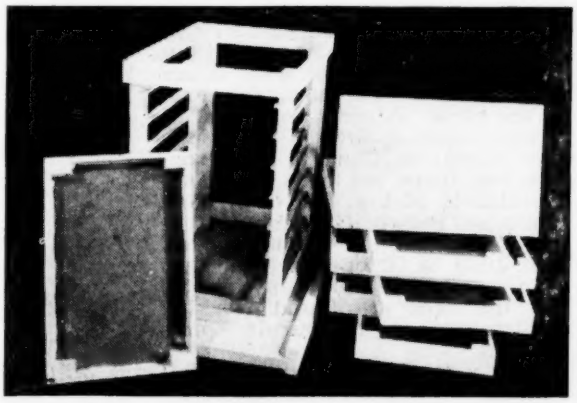


Fig. 3—Showing construction of a dry pollen feeder.

New Sources *of Nectar*

By Glenn O. Jones

There are no new honey plants. Nature's arrangements are not such that new plant families appear on the earth with any regularity and even a sufficient variation to class a plant as a distinct variety may take many many years.

This does not mean, however, that there is any need to accept the present sources of nectar as the best we can hope to have. There is plenty of room for progress and this progress will come from observation, investigation, research, and plant breeding.

To date very little has been done along these lines. Probably Frank Pellett comes as near being a pioneer in the field of honey plant investigation as anyone we could find. He started some 40 years ago to bring together on his small farm all the available sources of nectar that would prosper in the mid-west. Many of them were weeds to every one, but he and even Mrs. Pellett occasionally yanked out a few of them in the interest of beauty and order about the yard.

In the forty years he has grown several hundred varieties and studied their value as sources of nectar and pollen. Needless to say, a great many of them were total failures. Some were of fair value, some good, and some exceptional.

Anise Hyssop is a member of the mint family and was used by the Indians as a remedy for coughs and colds. The leaves were used for a beverage, much as we use tea. It gave the early settlers some fine crops of honey of pleasing flavor and quality and then apparently disappeared from the middle west under the pressure of the cow, the sow, and the plow. After a great deal of correspondence a few of the plants were found in Canada and from these few there has been established a sizable plot at the farm, now known as Pellett Gardens. It is highly attractive to the honeybees. From June to October, wet or dry, hot or cool, and from daylight to dark the bees are found working industriously on its purple spires of bloom.

Being a mint it does not fit well in the farm program as a pasture or forage crop but it has such great possibilities as a source of nectar that the Sioux Honey Association has set aside the sum of $1,000 for research work in the Experiment Station of Iowa State College to learn if the plant might have some use that would make of it a popular farm crop. It contains some of the essential oils that are used in perfumes, flavorings, and soaps and it may find a place on our farms as a source of these oils and as an additional cash crop.

Pellett Clover is not a new plant but it is definitely new on this continent. It grows wild in the high parts of the Caucasus and has been known to our plant experts for some years under the name of **Trifolium Ambiguum.** It took a beekeeper and plant enthusiast like Pellett to discover that it had a special attraction for the bees and that the visits of the bees resulted in quite a heavy set of seed. A plot of it resembles our common red clover very much but the blossoms are somewhat smaller, about halfway between common red clover and alsike in size. Another characteristic of this plant that is not common to the legumes is its spreading by means of underground stems, or rhizomes, that grow in all directions from the plants and several inches underground to send up new plants at frequent intervals and form a dense mat of plants. It is a

(Pellett Clover) Trifolium ambiguum, perennial, rhizomatous. Illustration shows flower and leaf characteristics

true perennial. No seed is as yet available but it looks like a future friend of both the farmer and the beekeeper.

Zofka clover first came to this country from Dr. Zofka of Czecho-Slovakia to Pellett. It was the result of a quarter century of breeding by Dr. Zofka to perfect a red clover with corolla tubes that were short enough to permit the bees to reach the nectar. The plant was not fully adapted to our climate or to our plant pests but in the few years it survived in the test plots it proved beyond a doubt that a red clover with short corolla tubes is an accomplished fact. The bees gathered nectar from it and it set seed abundantly.

These are but a few of the many things learned by one man in a few years of observation and investigation. What might we expect if we combine this observation and investigation with imaginative research and skillful breeding?

Each year we grow millions of acres of red clover. It yields but a very scant amount of nectar and a relatively small harvest of seed. A careful and thorough breeding program should produce a strain of red clover with uniformly shorter corolla tubes, short enough that the honeybees could reach the nectar and really get excited about filling the hive. The added visits of the bees would insure a seed crop of far greater value than the honey they gathered and the cost of seed should be lowered enough that more acres of red clover could be planted to add to the prosperity of the farmer and of the beekeeper.

Sweet clover, as a source of nectar, is losing ground and a large part of that loss may be attributed to the tendency toward finer stemmed and earlier maturing varieties which furnish neither green feed nor nectar during the hotter part of the summer.

Alfalfa has grown rapidly in popularity during the past thirty of forty years and is now being recommended as a partner in the permanent meadow with Brome grass. If it is to find such a permanent place in our agriculture it is time for the beekeepers to ask that some effort be made to segregate or develop a strain that will yield nectar and set seed under the various climatic conditions so that it may become a permanent source of nectar.

Red Clover with Variation in Corolla Tubes

A start has been made on some of these problems. In the current report of the State Apiarist for Iowa there is a report by Dr. J. N. Martin of Iowa State College that he has found a definite variation in the length of the corolla tubes of different plants of red clover. Any variable characteristic in any plant or animal can be further altered by selective breeding and **a strain of red clover with short corolla tubes is definitely possible.** Sweet clover strains that grow and bloom to a later date in the season are being developed by the work at several experiment stations. Another interesting strain of sweet clover has been developed at Iowa State College by the use of chemicals that alter the chromosome count of the plants. This one blooms over a longer period than usual and the fragrance of the blossoms can only be compared to the finest perfumes.

The Iowa Beekeepers' Association, at their annual meeting in November, made available to the Experiment Station of Iowa State College the sum of $500 to initiate work with all the legumes now commonly grown as farm crops to make available or increase the supply of nectar for the bees, and, by the added attraction for the bees, to make possible the harvest of larger seed supplies.

If some such project could be started in each of our state agricultural experiment stations we should have a definite improvement in nectar secretion from our legumes in a relatively short time and for each dollar the beekeepers realized in extra returns the general agriculture would be enriched a great many dollars.

Atlantic, Iowa

OUR FRONT COVER PICTURE

The Dogwood tree, so common during spring in different parts of the country, is not important to beekeepers. Occasionally, however, beekeepers report securing honey from certain kinds of dogwood, although they are not reliable sources of nectar.

Strawberries, Um!

By Mrs. Benj. Nielsen

Honey strawberry refrigerator pie. —Photo Courtesy Kellogg Co.

How will you have yours? Any way—just so it's strawberries? Well, it's all right to experiment and serve them in various guises—and I'll admit they will be good, but for ease in preparation and taste appeal there is nothing better, to my way of thinking, than strawberries and honey. Whether glistening ruby peaks emerge temptingly from a light "marinating" coat of honey, or the fruit is crushed and treated with honey is a matter of personal taste—both methods are superb. In either case the honey sweetened fruit should be allowed to stand long enough for the honey sweet and strawberry acid flavors to mingle and merge—chilling does wonders for it, too. As a rule, unless you are partial to more of a pronounced flavor, the mild, light colored honeys are ideal for strawberry combinations.

If you are fortunate enough to find bananas, cream cheese, and pineapple all at one time at your grocers and the strawberry patch is yielding, here are two treats that will win you new culinary laurels! How? Mash thoroughly ripe bananas, add crushed pineapple and crushed honey sweetened strawberries. Proportions? Don't fuss about that—just taste! And not too liberally, either, I know it's good—but the family will want some, too! Let stand two hours, or even longer, and serve thoroughly chilled, with or without honey sweetened whipped cream. Spread pineapple spears with cream cheese, garnish with whole berries and serve with the sweet clear dressing given below.

Sweet Clear Honey Dressing

One third cup honey, ¼ cup vinegar, ⅛ teaspoon salt, ⅛ teaspoon dry mustard, and 1 cup salad oil.

Bring honey, vinegar, salt, and mustard to boiling; cool and add oil slowly, beating constantly with rotary beater. Makes 1½ cups.

And if you are still in an experimenting mood, try your hand on one or all of the following.

Honey Crumb Pie Shell

Four cups corn flakes, ¼ cup butter or margarine, and 2 tablespoons honey.

Roll cereal into fine crumbs. Melt butter or margarine; mix with crumbs and honey. Mix well. Press crumb mixture evenly and firmly around sides and bottom of pie pan. Bake in slow oven, 325 degrees F., for 10 minutes. Cool before adding filling.

Honey Strawberry Refrigerator Pie

One honey crumb pie shell, 1 quart strawberries, 1½ cups water, ¾ cup honey, 1½ tablespoons cornstarch, 1 tablespoon gelatin, ¼ cup water, and 1 cup cream or evaporated milk.

Wash and hull berries; slice or chop coarsely. Cook 1 cup of berries with water until soft; strain liquid from berries. Add honey and cornstarch to hot liquid, stirring constantly. Cook, stirring until thick and clear. Soften gelatin in water and add to hot mixture. Cool until mixture begins to stiffen. Combine with berries and pour into crumb pie shell. Chill until firm enough to cut. Serve with whipped cream or evaporated milk, if desired.

Honey Lemon Cream with Fresh Strawberries

Two eggs, ½ cup honey, 1 cup milk, 1 cup light cream, ¼ cup lemon juice, 1 cup crushed and sweetened strawberries, and a few perfect whole ones for garnish.

Beat eggs until lemon colored; gradually add honey, beating constantly. Combine milk, cream and lemon juice; add to egg mixture. Freeze in tray of automatic refrigerator until just firm. Beat until light. Add crushed strawberries and continue freezing until firm, about 3 hours. Garnish with whole berries. Serves 6.

The bees, after being lightly sprinkled with sugar syrup, are dumped into the hive. The brood combs, filled with sugar syrup, are then placed in the hive.

The heavier the stores this spring, the heavier the supers at harvest time.

Feed *and* Succeed

A frame taken from a colony in the midst of heavy brood rearing, but running low on stores.

By Clarence Tontz

Every spring, even amid mild weather, but with scant bee pasture available, many bees starve to death with the honey flow only a few weeks away. At such a critical time the loan of some sugar syrup is usually paid back with high interest.

This spring, to stretch his sugar allotment to the fullest, the beekeeper will be honey ahead if he insures that his bee feeding methods exclude the common fault of wasting sugar syrup by the use of leaky pails. Before leaving the apiary, all the feeder pails given to the bees should be checked for leakers. A leaking pail can be detected by placing the finger tips on the bottom of the pail which is, of course, on top when in feeding position. If the pail is leaking, even slowly, a slight pulsation can be felt every few seconds. Bees utilize little syrup from a leaky pail. Most of it runs down into the hive and out the entrance onto the ground. It attracts robber bees, causing additional trouble. Leaky pails, if they are not too old and worn, can be made usable again by inserting a hive tool beneath the flange of the friction shoulder and bending it inward all the way around. This should cause the cover to again fit air-tight. The cover sometimes is at fault. If so, it should be discarded and replaced by a newer one. When a leaky pail refuses to be corrected in this way, the best remedy is to put the foot down on it—hard. Then there will be no danger of it getting mixed in with the good pails.

Around a quarter million pounds of live bees will be bought by beekeepers this year and the correct feeding of the new arrivals may mean the difference betwen a profit and loss for the season. The most satisfactory method of starting out package bees, in the writer's experience, is to give them standard brood combs freshly filled with sugar syrup. Because of the air in the comb cells, the syrup must be forced into them by sprinkling. Fill a large tub two-thirds full of hot sugar syrup. A sprinkling can (a quart tin with one-eighth holes punched in the bottom and handle attached) in each hand, the operator dips up syrup and lets the streams pour down into the cells. The filled combs are then placed on end in the copper boiler to drain before being placed in the hive. The bees sprinkled lightly while still in the cage, are dumped into the hive and the remaining frames put in. The hive entrance should always be contracted and the small opening stuffed with grass, otherwise a messy stream of bees may pour out the hole This often results in failure of the bees in getting properly established, causing drifting and sometimes hasty supersedure.

A periodic check of each colony and prompt correction of any disorder is a prerequisite to strong colonies. The beekeeper is rare indeed who can accurately determine the amount of stores his bees will need to take them through the winter and spring. Recently the writer talked with an old timer who has kept bees

(Continued on page 237)

The Honey Flow and Weather Data

By Ed Braun

Agricultural Scientist, Dominion Experimental Farm, Brandon, Man.

Beekeepers throughout the world, no doubt, have been discussing and studying weather conditions and their effect upon nectar secreting plants ever since honeybees were first domesticated. Considerable data has accumulated, particularly in reference to honey crop yields but very little information has been published during the last 20 years concerning the effect of certain weather factors upon the honey flow. A recent letter from M. J. Deyell, Editor of Gleanings in Bee Culture, contained the following statement: "A number of people in this country, especially in the middle latitudes of the United States, seem unable to understand how and why bees in Northern Canada, as well as the Northern tier of States, are able to pile up such big surpluses of honey. I have attributed the high per-colony averages obtained in the Northern latitudes to the longer days during the summer months which mean very intensive seasons. I cannot recall that this matter has been brought out specifically in the bee literature." It was suggested that the author of this article might throw some light on the problem.

It should be stated at the outset, that since 1936, we have had three colonies on scales; one each of Caucasian, Carniolan, and Italian races. During the months of July, August, and September, these colonies have been weighed at hourly periods during the day. Continuous records of temperature and humidity have been taken each year from April until the end of September. Precipitation data, as well as daily hours of sunshine, have also been recorded at the Weather Station maintained at the Experimental Farm, Brandon, Manitoba. Unfortunately, due to lack of time and help, this data, although on file has not yet been analyzed.

However, an article entitled "Climate and Man" and appearing in the United States Department of Agriculture Year Book 1941 (2) provides some interesting sidelights on the question of honey production. Briefly, the article explains the climatic divisions and how the flora of these divisions has been built up through the ages. It also points out the difference in the growing seasons of the North and South and various other factors that affect the growth and secretion of nectar of those plants upon which we depend for our honey crop.

Hildreth, Magness and Mitchell (2) in an article entitled "The Facts of Climatic Factors on Growing Plants" states that "temperature, moisture and light are the big three that have the most power over plant life, describing the effects of each." He also explains the effect of altitude, longitude and latitude on growth and maturity.

Clovers, especially biennial sweet clovers, are the main honey plants of the prairie provinces. Given suitable climatic conditions during the development of these plants and again during the blooming period of them, there is an abundance of forage available in most areas of the Canadian prairies.

Climatic conditions are our greatest worry and the following data may assist in explaining why such heavy gains are made when such conditions are right.

The honey yield data for the Dominion of Canada and the Province of Manitoba was taken from the Monthly Bulletin of Agriculture Statistics (1), March, 1939, and represents as accurate an estimate as can be made. The yield data from the Experimental Station or Farm are actual production averages computed from 80 to 140 overwintered and package-established colonies for the years in question and were obtained at Morden, Manitoba, for the years 1924-'34 and at Brandon, Manitoba, from 1935 until 1943. The weather data was taken from the Meteorological Records kept at the Dominion Experimental Farm at Brandon, Manitoba, and may not directly apply to the actual conditions existing at Morden, Manitoba, but would be reasonably representative of Manitoba weather conditions south of the 51st degree latitude.

Table 1 next page shows an average per colony production range of 36 pounds for the Dominion 120

TABLE I TWENTY YEARS' HONEY YIELDS, SUNSHINE & PRECIPITATION

Year	HONEY YIELDS IN POUNDS			WEATHER DATA		
	Dominion of Canada Aver. Production per Colony	Manitoba Provincial Average Production per Colony	Dominion Experimental Station or Farm Morden or Brandon Average Production per Colony	Brandon, Manitoba, Aver. Daily Hrs of Sunshine Ap. 1 to Sept. 30	Aver. Yearly Precipitation in inches	Canada Average Rainfall Ap. 1Sep. 30
1924	60	60	No Data	7.16	25.15	13.72
1925	65	107	69 No. 2	7.52	18.86	14.16
1926	63	82	124	7.86	21.03	14.54
1927	72	122	122	7.06	24.13	18.17
1928	66	97	140	8.06	18.06	13.62
1929	67	103	175	8.10	15.08	8.94
1930	68	117	167	7.01	20.45	14.49
1931	72	119	174	8.34	14.82	12.70
1932	61	180	133	8.04	24.33	15.71
1933	77	136	60 No. 1	8.03	19.55	13.70
1934	82	112	124	7.72	11.14	8.34
1935	75	97	107	7.13	26.52	21.20
1936	86	159	294	8.57	15.32	9.65
1937	60	122	136	7.80	24.76	17.73
1938	96	168	214	7.96	13.91	7.12
1939	71	94	58 No. 2	8.33	14.33	11.85
1940	59	68	72 No. 3	8.22	17.42	12.10
1941	67	110	191	6.83	21.53	17.02
1942	56	86	163	7.10	17.96	12.69
1943	78	95	146	7.92	14.55	9.97

No. 1 Flood damage in May and spray poisoning in July.
No. 2 Package bees on foundation.
No. 3 Practically all supers used contained foundation.

pounds for the Province of Manitoba and 187 pounds for the Experimental Apiaries over the 20-year period 1924-1943. The range in average daily hours of sunshine from April 1 until September 30 was 1.74 hours and the range in precipitation for the same period was 14.08 inches. Examination of the above data, together with monthly mean temperatures, to find some correlated factors which might provide some clues for the effect of sunshine on honey yields produced the following interesting though inconclusive table in which the average production per colony for the Experimental Apiaries were arranged in descending order of magnitude. Then the total yearly plus the current year's rainfall for the months of April, May and June which would affect the growth of sweet clover because the rainfall of the previous year would give the amount of all moisture available and would, to some extent, determine the spring growth which would ultimately affect the number of flowers produced and the resultant nectar secretion which in turn would be affected by the temperature during the day or night. These were compared with the average daily hours of sunshine (April 1 until September 30) and the mean temperature for July.

Before we could enter into any comparative discussion on weather factors and their relation to crop yields, particularly with reference to sunshine for any particular area, it was necessary to consult the data which had been published which dealt with weather factors and their relation to production of other types of crops. A brief summary of such publications would lead one to believe that a large error factor can creep in by simply taking a relatively short period of yields and trying to compare them with the weather factors for a relatively short period of time and I was surprised to find how difficult it was to get sunshine data for definite areas or States unless I went through all of the yearly publications from the United States Weather Bureau. I was, however, able to obtain monthly sunshine data for all of the weather stations located in the Prairie Provinces from the Canadian Department of Transport. A casual survey of the Canadian data showed a marked similarity in the averages extending from 10 to 58 years in the stations located in southern Manitoba and southern Saskatchewan and that these data were similar to those of the northern tier of States when taking into consideration that the first order Weather Bureau Stations in the United States use automatic instrumental recorders to determine the number of hours and minutes that the sun actually shines on any day, and with the possible amount of sunshine as a base, the percentage

Table II

Year	Average Production per Colony in the Experi. Apiary	PRECIPITATION Previous Year	Total Precipitation in inches	Spring rainfall in in. April May-June	Total Precipitation for Nectar Prod. Crops	Average Daily hrs. Sunshine 4-1;9-30 incropyr.	Mean Temp. for July incropyr.
1936	294	1935	21.20	4.54	25.74	8.57	74.0
1938	214	1937	17.73	2.55	20.28	7.96	67.5
1941	191	1940	12.10	7.17	19.27	6.83	68.6
1929	175	1928	13.62	4.88	18.50	8.10	66.1
1931	174	1930	14.49	3.80	18.29	8.34	66.0
1930	167	1929	8.94	8.78	17.72	7.01	67.4
1942	163	1941	17.02	4.97	21.99	7.10	63.7
1943	146	1942	12.69	5.29	17.98	7.92	68.7
1928	140	1927	18.17	7.31	25.48	8.06	64.6
1937	136	1936	9.65	8.17	17.82	7.80	68.2
1926	124	1925	14.16	3.59	17.75	7.86	65.6
1934	124	1933	13.70	2.67	16.37	7.72	66.6
1927	122	1926	14.54	9.80	24.34	7.06	63.5
1935	107	1934	8.34	9.04	17.38	7.13	70.9

of the possible is computed. Sunshine data are recorded for both values, hours of actual amount and percentage of the possible.

At the time of the longest day of summer, June 21, the possible amount of sunshine varies in the United States from 13 hours and 41 minutes at latitude 25° N. to 16 hours and 19 minutes at latitude 49° N. Thus, on a clear day in early summer, the most northern States receive about two hours more of sunshine than is possible in the extreme south but in early winter the reverse is true. In northern localities where the growing season is short, this greater amount of sunshine in summer is important in hastening the maturity of crops so that they escape early fall frosts.

The foregoing figures relate to the total possible amount of sunshine which would be experienced with a continuously clear sky. However, the amount of cloudiness varies greatly in different parts of the country and the actual amount of sunshine received depends on the frequency of cloudy weather. If the above sunshine data is compared with that in Canada, it must be taken into consideration that the weather stations in Canada use the Campbell - Stokes Sunshine Recorder which consists of a glass sphere which brings the sun's rays to a focus and this focus is directed on to a paper card on which the sun burns a record. Therefore, the actual hours of sunshine recorded do not necessarily compare with the total possible hours of sunshine which would be based on time of sunrise and sunset. Therefore, in this discussion, we might assume that the total hours of sunshine in southern Manitoba and southern Saskatchewan are similar to those existing in the northern tier of States.

The average temperature for June ranges from 60° to 70° F. in the northern States, is lower at western high elevations and rises to about 80° in the extreme south. In July, the average temperature range is from 65° to 80° F. in the Plains area. The range in maximum and minimum temperatures in the summer months may vary; for example, at Bismark, N. D., from 8° F. in January to 70° F in July or 62°, while at New Orleans it is from 54° F. in January to 82° F. in July or 28° being less than half as much as in the former instance. This is rather an interesting condition when we note that the average July temperature for Iowa is 72° F. in the northern part to 76° in the southerly and westerly portions. The State of Minnesota has an average mean temperature in the summer of 67.5° F. and has on the average 57% of the possible hours of sunshine. Louisiana, on the other hand, has 58 to 62% of the possible amount of sunshine in the summer months.

Therefore, on clear days in early summer, the extreme northern States receive about two hours more sunshine than that received in the Florida peninsula and extreme southern Texas.

C. E. Koeppe (5) in the book entitled "The Canadian Climate" states as follows "The intensity and duration of sunshine are, however, the fundamental factors in any climate. July, being a less cloudy month than June, shows as much as 340 hours of sunshine in southern Alberta. This figure, 70% of possible, averages 11 hours of sunshine per day for the

month. **The Great Lakes Region** averages about 8 hours per day." His climatalogical maps show that most of the area in the Prairie Provinces in which honey production is practiced falls in the isotherm of 100° maximum F. temperature during the summer months.

Referring again to the 1941 Year Book of Agriculture on page 739, there is a map of the United States upon which has been superimposed the average number of hours of sunshine daily for the summer period (June - August). This map, with the exception of the Southeast portion of the State of North Dakota and the State of South Dakota, shows that the Great Plains area extending from Manitoba and the United States border down to the Gulf of Mexico has an average of 10 to 11 hours of sunshine (1899-1938) with the exception of a few limited areas. Computing the daily hours of sunshine from the Brandon records (Campbell-Stokes Sunshine Recorder) for the same three months (June, July, and August) for a 14-year period shows an average of 8.7 hours of sunshine daily. No correlation effect could be observed in Table II in the hours of sunshine for the summer months as is evident for the total precipitation given in Table II which, for the first six years (1936-'30), is in a descending order of magnitude similar to the average production per colony. The mean temperature for July follows a similar course for five years. For the remainder of the years in Table II no definite correlation seems to exist. Therefore, from the brief study of the data available, it is very hard to definitely state what amount of precipitation, how many hours of sunshine, or what mean temperature are directly responsible for high honey crop yields in any particular area for any definite year. Therefore we proceeded to examine the spring strength records for the 14 years in question to see whether spring strength of the colonies might supply some clue to the variation but here again, no definite pattern could be evolved. At the University of Minnesota in 1929, I attempted to correlate biometrically the daily honey flow on a scale colony with the hours of sunshine, precipitation, maximum and minimum temperatures for five-day periods and found that no definite correlation existed.

Therefore, it is my own opinion that no solution will be found to the problem of the effects of sunhine, precipitation, or temperature on honey yields until an hourly or two-hourly period of study is made of the quantity and the sugar concentration of the nectar secreted individual species of plants and then attempt to correlate this data with the various climatic factors. Furthermore, to make this data of any value, it should be arranged in such a form that statistical analysis could be applied. It might be suggested that similar data could be obtained at Experimental Stations located in suitable areas distributed throughout the Great Plains area from Manitoba to the Gulf of Mexico. That colonies on scales be contaminated and additional information gathered on the quantity of sweet clover or alfalfa which is available for nectar secretion within a definite radius of those experimental apiaries. Such information being available, we might be able to secure an answer to the problem submitted.

References

1. Monthly Bulletin of Agricultural Weather Statistics, March 1939 pp. 123-124.
2. U. S. Department of Agriculture 1941 Year Book "Climate and Man."
3. Day Length and Crop Yields, U. S. D. A. Misc. Pub. No. 507.
4. Atlas of American Agriculture, Part 2, Section B, Temperature, Sunshine, Wind (1928).
5. C. E. Koeppe, The Canadian Climate McKnight & McKnight, Bloomington, Ill.

DDT NOT RELEASED FOR CIVILIAN USE

After the article by Dr. Eckert in April Gleanings appeared, page 131, we sent a copy of it to Mr. J. S. Houser, Chief, Department of Entomology, Wooster Experiment Station, Wooster, Ohio. He replies:

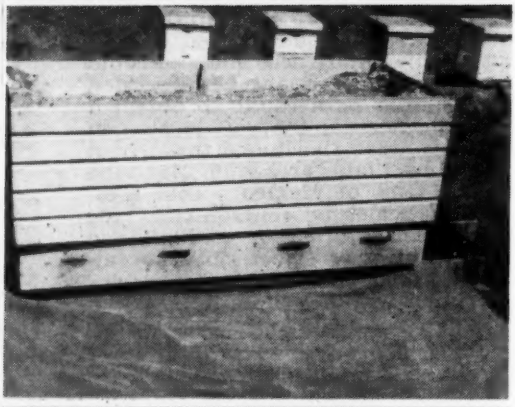
Referring to the footnote on page 131, April Gleanings, the statement is made that DDT has just been released for general agricultural use by the WPB. This is not the fact of the matter. Actually, WPB has given manufacturers the privilege to sell DDT direct for experimental purposes, with the stipulation that the experimental work be supervised by qualified persons. Thus, you see this puts a much different light on the matter than if DDT is to be released indiscriminately.

The fact of the situation is that agricultural and horticultural crops must be sprayed on occasion and is the only recourse in preventing excessive losses from insect pests. So, I think that the matter sums itself up into the proposition that the users of sprays and dusts should be as careful as possible and that the bee people should be as tolerant as possible.

Unpacking Sequences

By W. L. Coggshall

Single four-colony case—note the alighting boards before each of the entrances; these save many bees on windy days.



Canvases are thrown down on all four sides of the case.

Most of the remaining shavings are pushed out on to the canvas.

Colonies are set out on each end of these long stands. Hive covers are stored all winter under this botton section of the case. Three entrances have been fitted with a strip of tin to prevent mice from getting in.

Below: The four colonies completely unpacked and ready for the season.

Eighty Years Among the Bees

By E. R. Root

A. I. Root's Simplicity Beehive of 1870 Required Neither Smoke nor Hive Tool to Open on Any Warm Day when the Bees Could Fly.

The statement in the sub-head may be challenged but A. I. Root used such a hive for years without a bee veil, smoker, or a hive tool.

The movable parts of the Simplicity bee hive, and more particularly the frames were so designed that the contact points came together like knife edge to knife edge—edges at right angles to each other. If you can imagine projecting prongs of sheet metal at each top corner of the frame, resting on a metal knife edge rabbet of tin, as shown in Fig. 2 and Fig. 3. you will see why the bees could not glue the parts together or get pinched. Go further, and make the hive parts with bevelled edges so that if one set the hive down on a bottom board or piled the hives crosswise, he would kill no bees. These knife edges of the frame and bevelled edges of the beehive made it possible to separate the different parts of the hive without a snap, without bee glue, and without killing a single bee. (A. I. Root was very particular about the needless killing of bees because he said a single bee caught squealing with pain could arouse the fury of a dozen other bees, and that was true).

In my early boyhood days after I got past the fear of stings, I used to sit down and open one of A. I. Root's original Simplicity hives. It was just fun. I well remember how I

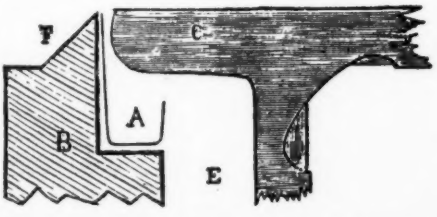


Fig. 1.—This shows the metal projection consisting of two prongs with knife edges which rested upon rabbet A. This metal corner, so named, was fastened to the frame, as shown by sharp points opposite letter E above. There were four of those notches which fastened to the top bar and to the end bar, and it made a very rigid corner construction, and a bee-glueless point of contact that supported the frames in the hive. These metal corners were blanked with a pair of dies from thin sheet metal. The design so cut was put into a die-forming machine that presented the sharp points which were clinched over, as shown in Fig. 3 and at E above.

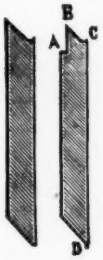


Fig. 2 shows both the cross sections of the side and end of the hive with beveled edges. At the point AB was a metal rabbet, shown at A in Fig. 1. This was in the end of the hive. The sides of the hive were beveled both at the bottom and top.

could lift the cover without a snap, without a hive tool, veil or smoke; how I could gently roll back the enamel cloth (oil cloth) over the tops of the frames, and not a bee would rise. I could take out any frame by crowding them over on their knife edges, pull out any one frame without rolling over the bees, and when the bees were Italians, I could find the queen, examine every inch of comb surface with perfect ease and comfort, without a smoker, which I did not have. (Figs. 1 and 2 show how the hive parts were adjusted to each other, either with knife edges crossing each other or at right angles, or sharp bevelled parts, as shown in Fig. 2. Reading carefully the legends underneath, one can un-

(Continued on page 233)

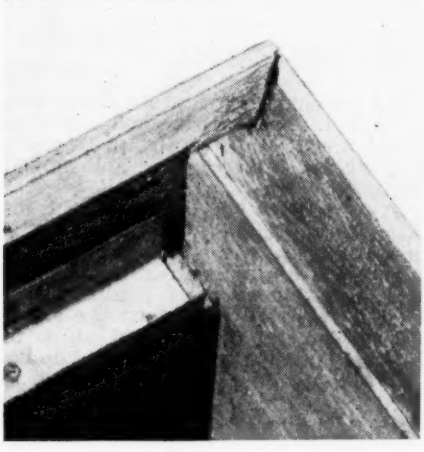


Fig. 3.—Looking down on the top corner of the Simplicity hive. The corner is a halved mitre point. The tin rabbet is shown in the center.

From the Field of Experience

IMPROVING THE BEE BY BREEDING

By W. C. Roberts,
University of Wisconsin, in cooperation with the U. S. Bee Culture Laboratory

Questions on bee breeding and queen rearing are often asked, but unfortunately we cannot always give definite answers. This is regrettable but the plain facts are that we don't know all the answers.

The breeding of the bee has always been handicapped by the fact that the queen mates in the air with whatever drone she encounters. If one analyzes this situation, he concludes that matings in nature between queens and drones of a selected type depends principally on the laws of chance and the mathematical proportions of the selected drones flying at the same time that the queen goes out to mate. In other words one is never entirely sure of a certain mating occurring in nature.

The technique of artificial insemination has only recently been developed to the stage at which it can be used successfully. At present by artificial insemination we can mate a queen with whatever drone is selected and know that the selected mating can be controlled. Thus the first step in the improvement of the honeybee by breeding has been made. The future of bee improvement lies in the hands of those who have mastered the technique and will use it to develop a better bee.

The stage of advancement of bee breeding is now at about the same place as cattle breeding was when man first began selecting his stock. Our ideals of a breed type are certainly not what they will be ten years from now. Great progress has been made in cattle breeding as well as in the breeding of other animals and plants. Strains or breeds of cattle today are so different from the ancestral type that one hardly considers that the Holstein and the Hereford are related and both were developed from just cows. Today we have strains and races of bees which are not clearly defined and these are intergrades between all of these. So we are starting with what might be called "just bees" and hope to make improvements by selected breeding. The improvement of the honeybee by breeding need not be as slow as cattle breeding for ten or more generations of bees can be produced during the time required for one generation of cows.

FEEDING DRY SUGAR

By Elmer G. Carr

At the Southern States Conference it was revealed that dry sugar is being used successfully in feeding bees, both full colonies and queen mating nuclei.

As reported by Mr. Everitt of Allentown, Penna., who attended the conference, a sheet of newspaper is placed on top of the frames and the dry sugar placed on it. Another procedure reported is to pour the sugar on top of the frames and allow it to trickle down between the combs.

For those beekeepers who have to feed and find preparing the liquid feed a bother, this news is hailed with delight. Anything which will serve to lighten the beekeeper's load, especially in these times of help shortage, is particularly welcome.

To many beekeepers this dry sugar feeding is news. However, it is interesting to note that A. I. Root advocated it as recorded in the February, 1874, issue of Gleanings in Bee Culture, page 18, as follows:

"To such of our Southern friends and others as have their bees flying when this reaches them, we would say, commence giving them dry sugar as soon as they will use it; place it in the sun but out of the wind and get them to 'building up' as fast as possible."

One is inclined to ask the old question, "What is new under the sun?", also to marvel at the advanced ideas of the old beekeepers as compared with recent day practices.

Pennington, N. J.

[Dry sugar can be used to tide a colony over, just before the honey flow.—Ed.]

SWARMING CAN BE ELIMINATED

By E. S. Miller

With between 60 and 80 strong colonies I have had no swarms in the last four years. And I have not hunted queen cells, spread brood, alternated combs and foundation, nor indulged in the many other useless operations so often advocated for the control of swarming. Furthermore, colony production has been largely increased and labor reduced to a minimum.

Important in swarm prevention are: a good non-swarming strain of bees; shade; adequate ventilation, top and bottom; ample room; and, last but not least, the right kind of manipulation at the right time, **before** not after the bees make preparation to swarm.

For a number of years I have been rearing queens by grafting cells with larvae taken from the best colonies, considering color, productivity, gentleness, non-swarming and other characteristics indicating superiority and purity of stock. Little progress can be made in improvement of stock by using cells taken promiscuously here and there from colonies that seem to be good producers. It often happens that a hybrid colony will surpass all others in production but it cannot be depended upon to transmit this quality to its progeny. Only cells grafted from superior pure stock will result in improvement, and the beekeeper who rears queens from swarm cells must expect swarms.

Our bees are now wintered in two-story hives supplied with 60 to 80 pounds of stores. About the beginning of fruit bloom the queen is confined to the lower story, colony strength equalized and a deep super added, making the hive three stories. This usually holds back any tendency to start queen cells until the beginning of the clover flow when all brood except one frame is raised to the top, making the hives now four stories high with the queen in the lower section on nine broodless combs and one comb of brood. In this manner all colonies are treated at about the same time, rendering unnecessary any searching for queen cells or watching for swarms. In some cases it may be advisable to repeat the operation three weeks later when the brood chamber again becomes crowded, but in the last two or three years I have not found it necessary. Conditions vary from year to year and with different localities, and Demareeing may be earlier or later but, in general, should be before hives become so crowded as to induce swarming.

In Demareeing, foundation should not be used in the lower story if one expects to secure good combs. They should be provided in advance by having full sheets of foundation drawn out above the brood, during a honey flow, preferably in the second story or food chamber which should be kept on the hive the year round.

Valparaiso, Indiana

[Mr. Miller is an experienced beekeeper of many years. His advice is sound all the way through.—Ed.]

THE FIRST ATTACK OF BEE FEVER

By Wayne A. Russell

It began one spring day in 1941 when my wife and I visited the Herons. Bill Heron led me to his back yard and proudly pointed to his brand new hive, which, I observed from a respectful distance, was alive with honeybees. And Anne, his wife, chimed: "Bill finds them so interesting—why, he sits on the ground for hours, watching them work!" My wife and I exchanged stealthy glances—wondering whether poor Bill was becoming a little foolish. A grown man sitting for hours on the ground watching insects! (My judgment has since proven sound—Bill should have used a little stool, as I do now.)

Then he launched into a lecture known to all amateur beekeepers, which might be entitled "The Story of Bees." Result: The following spring I sent an order to a mail-order house for bees, a hive, and other necessary beginners' items.

A letter came shortly, telling me they were unable to supply the hive or items, but that the bees were coming via parcel post. No hive, no smoker—just bees! My wife became excited. I, however, remained perfectly calm and phoned them, in-

quiring "What good are Hees without a Bive?" They saw my point and returned my money, supposedly concelling the order.

Then I ordered the bees and equipment from a bee supply house and in due time, all came. I installed the bees and they immediately, to our delight, went to work.

A few days later the parcel post man rang our doorbell. Thinking it was a package of rose bushes we had ordered I called down from upstairs, "Just leave them on the porch." A little dubiously he answered, "Well, okay."

As I came downstairs a mighty hum assailed my ears. Could it be? It was. More bees.

I drove immediately to New York to get another hive, which the dealer let me have, although at the time (1942) he was swamped with orders.

Upon returning with the hive I was met by an excited wife, who reported that our next-door neighbor, Jack Witmondt, had found a loose swarm in a small tree several miles away. She and Jack urged me to "come quick and catch them!" Still more bees. "Come quick and get killed," thought I. I had never before even seen a swarm.

But, with a bee book in my left hand, a pillowcase in my right, and trepidation in my heart, I went.

Amazingly, the bees acted just as the book said they would, and except for the ones I scooped up by the handful from the ground, where my clumsiness had let them spill, none seemed anxious to sting.

But I **still** had a 3-pound package of bees in the cellar. Another phone call to the bee supply dealer and another trip to New York for a hive fixed that.

So, at the end of my first week as a beekeeper I found myself the happy, if somewhat bewildered, owner of three colonies.

River Edge, N. J.

(To be Continued)

DETECTING ROBBER COLONIES

By W. P. Kinard

At times during a dearth of nectar, bees are prone to rob, especially if they have been fed sugar syrup.

Last year one colony was being robbed out. Contracting the entrance was to no avail. I was desirous of knowing the colonies at fault. Closing the entrance of the colony being robbed, shutting in a horde of robbers, I had an idea! Paint the robbers white to learn their origin.

Off to the house I ran for some flour which was placed at the entrance of the hive being robbed. While the robbers were in jail I quickly reversed every entrance reducer in the apiary. This was to cause some hesitation on the part of the returning robbers. Then I opened up an entrance in the colony being robbed. Dashing through the small entrance full of flour the robbers got a white-washing. I could see the white fellows trying to find their entrances. And to my surprise in an apiary of over 50 colonies only three were at fault. So the situation was easily handled.

Louisville, Miss.

[Usually robbing is confined to only one or two colonies, but unless stopped it may start numerous others.—Ed.]

W. P. Kinard and his five "helpers".

BEE PASTURE PROLONGED BY SEEDING THREE VARIETIES OF SWEET CLOVER

By A. S. Wurz, Jr.

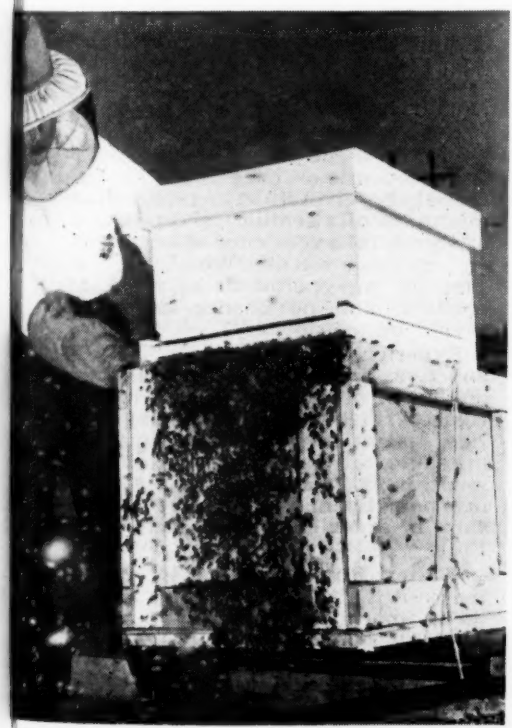
Sweet clover is the most important and widely used of our cultivated plants for bee pasture. Under favorable conditions it produces large amounts of the highest class honey. The wise bee-man knows that by proper management it is possible to increase the duration of the blooming period. Experiments conducted at the University of Saskatchewan, at Saskatoon, indicate that the flowering period may be greatly lengthened by planting three different varieties which bloom at different periods. This can be accomplished by mixing common white, common yellow and the newer variety, "Redfield Yellow," in the case where clover is grown as pasture, or seeded to different fields where hay is required. A good plan is for beemen to club together in each locality and distribute to farmers adjacent to their apiaries the varieties, such as Redfield Yellow, where it is not already grown.

The experiment at Saskatoon indicated that by seeding the three mentioned varieties the blooming period was extended by 35 to 40 days, as for instance, the common yellow begins to flower 10 days earlier than the common white. Redfield Yellow, on the other hand, usually begins flowering 21 days later than the white, its blooming period lasting under favorable conditions for 40 days. Hence it is apparent that greatly increased honey crops can be produced by this simple variation of seeding; increased quantities of honey that are produced with the same number of bees and equipment, extra quantities that are now needed as never before.

Rockyford, Alta.

NOBODY GOT STUNG

By H. Gray Harris



This concerns Hugh Payne, Dept. 181, Douglas Aircraft Company, Oklahoma City, Oklahoma, and a deal which he negotiated with Material Conservation.

Payne consulted Clark Hogan, Conservation's king bee, about the purchase of a box for a bee hive.

"We not only have the box," said Hogan, "but the beehive—with bees. What do you offer?"

Payne agreed to pay $2.00 for the box, which housed a propeller hub for a C-47 before the swarm had to get out and find a new place to eat, sleep, and make honey.

So Payne hived the bees. It was easy. Fortified with his beekeeper's hood, he searched 30 minutes through the droning bees for the queen. That was all he needed, he said.

The queen was found and placed gently in the hive. All the others followed.

"Nobody got stung."

SECOND GLANCES

By C. M. Isaacson

Package Bees in Saskatchewan is part of the title of Mr. Mallory's article (page 121), but its context is not sectional. There are many points that bear repetition—the cooperation of their Association with southern shippers to bring about better quality shipments of packages; mention of the value of **dark** combs of honey and pollen to install on; the "gorge and shake" method of installation, with immediate liberation of queens (this is growing in acceptance everywhere now); and the admonition that packages properly installed on sufficient food need little care until honey-flow time. This last is not only welcome advice now when all are shorthanded, but very true. Keep all these points in mind.

Purchase of used equipment may often bring later difficulties, so Grant Morse' words are all the more enjoyable (page 124). It leaves one with a pleasant feeling to read of the trustworthiness and real love for the work Mr. Morse found in the original owner of his purchase. "The interiors were like the exteriors"—a real tribute. And that small trick of leaving the old queen caged for a time instead of disposing of her immediately when requeening, should be worth a trial by any beekeeper.

Dry skim milk as a pollen substitute has been spoken of much lately, so Prof. Haydak's report is timely (page 126). His conclusion that it is less efficient than natural pollen as a supplement to soy flour would seem to settle a disputed point. But to me, part of the report is not entirely clear. Mr. Haydak states "four times as many larvae reached the sealing stage in the pollen supplement fed colonies than in the colonies fed dried skim milk-soybean flour mixture." But his table fails to show this, and his later words in the same paragraph say "the final results were equal for both groups." Just what is the indice of skim milk as a substitute—the table shows it as 1—yet the article concludes it is inferior (?).

The subject of bee poisoning appears very frequently of late, yet not too often, judging especially from reports from the irrigated and fruit growing regions. Mr. Eckert here presents perhaps the most thorough discussion yet published in Gleanings (page 129). His conclusion that the spraying of fruit in bloom, together with contamination of cover crops and adjoining areas or weed plants, is the chief source, is in line with that of many others. (That honey, due to the physical processes in its preparation, is practically certain to remain uncontaminated is welcome news). And his recommendations as to control should be studied and made use of. To time spray applications correctly, dispose of cover crops and weeds before spraying, and to avoid dusting if possible, are not overly difficult precautions for orchardist or farmer to follow (the advice to ban airplane dusting probably would be the hardest to put across). They would pay all parties concerned, much. That repellents are not of definite help is unfavorable, as is the release of DDT insecticide before proper research as to its use. Let us hope that united efforts can bring the whole problem under control. (See page 201.)

Rendering beeswax. Allen Latham shares his proven methods with Gleanings' readers, and gives certain pertinent bits of advice (page 134). One—let a manufacturer equipped for it render your slumgum and old combs. Two—and this cannot be emphasized too often—when rendering beeswax, stay by it!

"Beekeeping with less labor" might well be the title of John Bruce's words on page 135. The essentials he gives (for success with a minimum of attention) are products of successful experience—"bee proven", in other words. We all need to simplify our operations as much as possible, and no chance to do so should be overlooked.

Experience is valuable. That is an axiom, and when we can make use of that of others it is all the better. Hence "Eighty Years Among the Bees" is not only very pleasant reading, but profitable. Editor Root has seen several generations of beekeeping pass by and has added to his store of knowledge from each (page 137).

Walter Hull's nail jig is one of those little devices that loom big in their final help. Thank you, Mr. Hull, for sharing (page 140).

Middle River, Minnesota.

Talks to Beekeepers

By M. J. Deyell

Use Your Head—Save Your Back. If more of us would do this we would be better off. Most of us do certain things simply because others have done them. It seems to me, as beekeepers, we should ask ourselves, "Just why am I doing this?" After we have answered this question satisfactorily we may decide not to do what we had in mind to do.

During this coming season when time is valuable and help scarce, all of us should use what little gray matter we happen to have to the very best advantage in order to save our backs.

I remember one year, 1940, when I was badly crowded with work, hardly knowing what to do first. At that time I was operating about 60 hives of bees of my own on the side. As a matter of fact I still have that many hives as a sideline. I managed to give the bees a thorough checking during the spring months and put in a few new queens where they were needed. I also put on supers during the fruit bloom and dandelion honey flow. When the main honey flow came later on, I simply put on all the supers I had, even without queen excluders. The flow came so fast that I didn't have time to do what I had ordinarily done in former years.

Judging from the crop secured, it would have been folly to have spent more time on those bees. They went right up into the supers without attempting to swarm. As the combs in the supers were filled, a few queens that went upstairs to lay eggs in the supers were driven down into the brood chambers where they belonged.

I am not advocating going without queen excluders but I am saying that in some instances queen excluders may be honey excluders unless they are used intelligently.

When the colonies actually get started to work in the supers, queen excluders may be put on to advantage but to put them on too early in the season, especially when supers containing full sheets of foundation are used, colonies may balk about entering the supers and this may result in swarming.

Adding Queenless Bees to Weak Colonies. We had quite a number of colonies below par this past spring, especially in yards used for supplying package bees last season. It so happened that we were able to get queenless packages from the South the last week in March. Southern shippers had an early season just as we have had in the North and, consequently, their hives were boiling over with bees a few weeks prior to the regular shipping season which commenced in April.

As we are short of help I tried out a method of uniting queenless packages with weak colonies that has proved very satisfactory. After the packages arrived we poured warm sugar syrup made from equal parts of granulated sugar and water through the packages that were placed on a couple of sticks over a wash tub. We piled the packages flatwise, about five or six high. Pouring the syrup with a garden sprinkling can through the entire pile of packages certainly gets the bees well saturated with syrup. After the bees were filled with syrup we hauled them to the outyards. In some instances the roads to the outyards were so muddy that we had to carry the packages from the main road to the apiaries on a stretcher or carrier. We emptied a package of bees in front, close up to the entrance, of each weak colony. The bees entered the hives immediately. This method may be used when weather is warm enough for bees to crawl into the hives. During cold weather bees may be

shaken into an empty hive body, above the inner cover with the center block removed. In checking three apiaries in which 75 queenless packages were added, only two or three queens turned up missing.

Weak colonies, or, rather, the ones that were weak, are now forging ahead rapidly. Colonies that had brood in only two or three combs now have brood in six combs. (This is April 10).

We Tried Something Else. We found an occasional queenless hive. Not having any young laying queens we placed a frame of brood in the center of each queenless hive, then gave each a queenless package of bees. It so happened that there were quite a number of drones with these queenless packages. If the weather is suitable for queens to mate, these queenless hives will probably develop queens in due time. We examined some of these hives since the packages were installed and found nice large queen cells on the combs of brood given.

Put on Supers When You Have a Chance. In this area it is usually necessary to put at least one super on each strong colony prior to or during the spring honey flow from dandelion and fruit bloom. If we fail to do this we may have some swarming. It does no harm to put supers on strong colonies early. They should be put on top.

We have found from past experience that a good time to put these supers on is during a dry spell of weather when roads are accessible to these yards. If we put off supering and a wet spell comes, we may find ourselves carrying supers from the main road to the yards. This means using our backs too much.

No Two Seasons Alike. If we could depend on each season being practically the same as the preceding one, we could plan our program in advance, then carry it out on schedule. Unfortunately, or, perhaps, fortunately, the weatherman plays some tricks and keeps us on our toes continuously.

This spring bees around Medina began getting pollen March 15, the earliest I have ever known pollen to be collected here. This pollen flow continued each day for almost two weeks. We then had a few cold days. I examined a very populous colony in an apiary belonging to my son-in-law, now in the service. This colony had brood in eleven combs on March 27. There were two shallow extracting supers with combs piled up in the yard, so I put them on. I have not seen the colony since but I suspect there is fresh honey in some of the combs of the supers put on at that time.

On March 24, in one of our apiaries in western Ohio, my helper and I looked into a very populous colony, and to our utter surprise, saw the top bars, also combs in the brood chamber, being whitened by the bees. We could scarcely believe our eyes. That colony was gathering nectar from some source, perhaps soft maple.

In Beekeeping, We Have to be Ready for Every Emergency. I should perhaps say that on March 24, when we visited a yard of 85 colonies in western Ohio, we took along a load of shallow extracting supers and put one on each colony. Think of it—supering in March, in this latitude! Ordinarily, we do not put on the first supers until the last week in April or the first week in May, ready for the fruit bloom and dandelion honey flow.

We Like to Have a Scale Hive. For a number of years we have maintained a hive of bees on scales in our home apiary. It serves as a barometer of conditions in this immediate vicinity. Ordinarily, we remove the hive from the scales in

A scale hive tells us what bees are doing during the season.

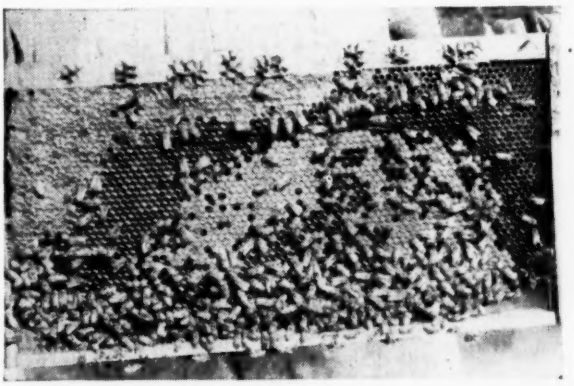
the fall and put the scales in a dry place during winter. This past winter, however, we left the colony on the scales during the winter. You readers may be interested in records of weights taken during intervals of the past winter. This colony occupies a double story, single walled 10-frame hive with metal cover. The upper story is a deep or standard super. On November 15, 1944, the gross weight of this hive was 117 lbs.; on December 11, the weight was 115 lbs., which showed a loss of approximately 2 pounds for one month. The weight on January 12, about a month later, was 112 lbs., a loss of three pounds. On February 15, the weight was 105½ lbs., a loss of 6½ lbs. in a month. On March 15, the weight was 99½ lbs., a loss of 6 lbs. for the month. Today, April 11, the weight is 93½ lbs., a loss of 6 lbs.

This makes a loss of approximately 5 lbs. per month for 5 months. As we would expect, the loss during the early part of the winter was less than it was during the latter part of the winter, presumably because brood rearing in this latitude begins in late January or early February.

I should say that the hive on the scales was not packed. This winter we were conducting an experiment in our experimental yard. We have five two-story colonies packed in building paper, with five inches of straw on top and around the hives; five colonies in two-story Buckeye hives; and five colonies in double stories without any packing. All of these hives were weighed and the weights carefully tabulated on November 24. We intend to weigh all of these hives again in a few days, then check all of the colonies for brood count. We have conducted this experiment twice in the past but are doing it again. I shall report the results later.

A Word to Beginners on Swarm Control and Handling Swarms. The best way to control swarming is to put on supers a little in advance of the time they are actually needed to relieve congestion within the hive. A congested brood chamber is the main cause of swarming.

The old method of handling a swarm was to put it in a hive on a new stand. A much better method is to set the old or parent hive on a new stand, at least six or eight feet away, as soon as the swarm issues, giving the hive a quarter turn, thus facing the entrance away from its former position. Another hive containing either frames with full sheets of foundation, wired, or, drawn combs, is placed on the old stand, to receive the swarm. Frequently, the swarm will cluster on a limb of a tree. Sometimes the swarm clusters on the top of a tall tree which causes the owner to do some tree climbing. The limb, if not too large, may be cut off and the bees shaken directly in front of the hive on the parent stand. If impossible to saw the limb off, the swarm may be shaken into a large two-bushel basket with a wire wound around one of the handles, so that after the bees are shaken into the basket, the handle may be wired to the limb of the tree temporarily, until the swarm has clustered on the inside of the basket. The swarm may then be carried to the hive and dumped in front of it.



A comb taken from a brood chamber. Note the young downy bees, the sealed honey in the upper left corner, also the cells of pollen just below the honey.

Who's Who in Apiculture

To supply a handy reference of the names and addresses of state and provincial apiary inspectors, secretaries of beekeepers' associations, extension workers in beekeeping, and other information often needed by our readers, we have corrected our "Who's Who in Apiculture", as of April 1, 1945.

State or Prov.	Beekeeping Taught in Agri. College	Bees on Combs Admitted	Net Wt. Law Ex.	Net Wt. Law Cb.	Inspector State or Province	Secretary State Association
Ala.	Yes	No	Yes	Yes	Chas. A. North, Montgom.	F. E. Guyton, Auburn
Alta.	No	No	Yes	No	W. G. leMaistre, Edmonton	W. G. leMaistre, Edmonton
Ariz.	No	Cert.	Yes	Yes	Paul R. Grant, Phoenix	Paul R. Grant, Phoenix,
Ark.	Yes	Cert.	Yes	Yes	State Plant Board, Lit. Rk.	Irvin E. Nantze, N. Lit. Rk.
B. C.	No	No	Yes	Yes	A. W. Finlay, New West.	W. H. Turnbull, Vernon
Calif.	Yes	Cert.	Yes	Yes	H. M. Krebs, Sacramento	Tom Davis, Sacramento
Colo.	No	Cert.	Yes	Yes	F. Herbert Gates, Denver	F. Herbert Gates, Denver
Conn.	No	Cert.	Yes	Yes	R. B. Friend, New Haven	Chas. J. Rost, Meriden
Dela.	No	Yes	Yes	Yes		Extension Entomologist
Fla.	No	Cert.	Yes		R. E. Foster, Gainesville	A. J. Boettger, Okeechobee
Ga.	Yes	Permit	Yes	Yes	A. V. Dowling, Valdosta	W. P. Yarbrough, Hahira
Idaho	No	No	Yes	Yes	C. F. Feeler, Nampa	J. A. Redfield, Idaho Falls
Ills.	Yes	Cert.	Yes	Yes	Carl E. Killion, Paris	Hoyt Taylor, Pleasant Pl.
Ind.	Yes	Cert.	Yes	Yes	Jas. E. Starkey, Indianap.	Jas. E. Starkey, Indianap.
Iowa	Yes	Cert.	No	No	F. B. Paddock, Ames	F. B. Paddock, Ames
Kans.	No	Yes	No	No	R. L. Parker, Manhattan	W. N. Cline, Fredonia
Ky.	Yes		No	No	W. A. Price, Lexington	Arthur Lose, Anchorage
La.	Yes	Permit	Yes	Yes	W. E. Anderson, Baton R.	Warren Whitcomb, Bat. R.
Me.		Cert.	Yes	Yes	Paul. Caine, Winthrop	C. O. Dirks, Orono
Man.	Yes	No	Yes	No	L. T. Floyd, Winnipeg	F. R. Garland, Winnipeg
Md.	Yes	Cert.	Yes	Yes	Geo. J. Abrams, Col. Park	Geo. J. Abrams, College P.
Mass.	Yes	Cert.	Yes	Yes	B. N. Gates, Worcester	Eugene F. Trainor, Worces.
Mich.	Yes	No	Yes	Yes	D. P. Barrett, Lansing	R. H. Kelty, Lansing
Minn.	Yes	Cert.	Yes	Yes	T. L. Aamodt, St. Paul	Chas. S. Hofmann, Janesv.
Miss.	Yes	Cert.	No	No	Clay Lyle, State College	Clay Lyle, State College
Mo.	Yes	Yes	Yes	Yes	No official inspector	
Mont.	No	Permit	Yes	Yes		Mrs. O. R. Burdett, Laurel
Nebr.	No	Cert.	Yes	Yes	L. M. Gates, Lincoln	Mrs. Henry Puppe, Nebr. C
Nev.	No	No	Yes	Yes	Geo. G. Schweis, Reno	No state association
N. B.	No	No	Yes	No	Ersel F. Moore, Fredricton	
N. H.	Yes	Cert.	Yes	Yes	Will E. Clough, Gilmanton	Henry J. Holt, Manchester
N. J.	No	Cert.	Yes	Yes	E. G. Carr, Pennington	E. G. Carr, Pennington
N. M.	No		No	No	Ray Parks, Lemitar	No state association
N. Y.	Yes	Cert.	Yes	No	A. C. Gould, Albany	E. T. Cary, Syracuse
N. C.	Yes	Cert.	Yes	No	D. L. Wray, Raleigh	F. B. Meacham, Raleigh
N. D.	Yes	Permit	Yes	No	J. A. Munro, Fargo	Arvid P. Benson, Moorhead
N. S.	Yes	No	Yes	No	H. G. Payne, Truro	Evan Craig, Kentville
Ohio	Yes	Cert.	Yes	Yes	Chas. A. Reese, Columbus	W. E. Dunham, Columbus
Okla.	Yes	Cert.	No	No	Clyde A. Bower, Okla. City	No active association
Ont.	Yes	Permit	No	No	G. F. Townsend, Guelph	G. F. Townsend, Guelph
Ore.	Yes	Cert.	Yes	Yes	A. Burr Black, Salem	John D. Burt, Newberg
Pa.	No	Cert.	Yes	Yes	Harry B. Kirk, Harrisburg	H. M. Snavely, Carlisle
Quebec					Jules R. Methot, Quebec	
R. I.	No	Cert.	Yes	Yes	O. Evart Janson, Provid.	Edmund H. Boyes, Provid.
Sask.	No	No	Yes	No	R. M. Pugh, Fort Qu'Appel.	R. M. Pugh, Fort Qu'Appel.
S. C.	Yes	Cert.	Yes	Yes	J. A. Berly, Clemson	W. K. Moore, Sandy Spgs.
S. D.	Yes	Cert.	Yes	Yes	A. N. Pastian, Brandon	
Tenn.	Yes	Cert.	Yes	Yes	John M. Amos, Nashville	
Texas	No	Permit	Yes	Yes	F. L. Thomas, College Sta.	H. B. Parks, San Antonio
Utah	No	Cert.	Yes	Yes	Wm. L. Moran, Salt Lake C.	Wm. L. Moran, Salt Lake C.
Vt.	No	Yes	Yes	Yes	Rodger Jones, Johnson	Chas. Mraz, Middlebury
Va.	No	Cert.	Yes	Yes	H. W. Weatherford, Ver. H.	H. W. Weatherford, Ver. H.
Wash.	No	No	Yes	Yes	Geo. N. Paige, Tacoma	R. L. Longanecker, Wapato
W. Va.	No	Cert.	Yes	No		No state association
Wisc.	Yes	Permit	Yes	Yes	James Gwin, Madison	H. J. Rahmlow, Madison
Wyo.	No	Permit	No	No	Geo. B. Harston, Powell	H. B. Addleman, Douglas

United States—Investigation and Demonstration in Beekeeping, James I. Hambleton, Bureau of Entomology and Plant Quarantine, Beltsville, Md.; Southern States Field Laboratory, W. W. Whitcomb, Baton Rouge, La.; Pacific Coast Laboratory, George H. Vansell, Davis, Calif.; Inter-Mountain Laboratory, A. P. Sturtevant, Laramie, Wyoming; Bee Culture Field Station, C. L. Farrar, Madison, Wisc.; and University of Arizona, Tucson, Arizona.

Dominion of Canada—Investigation and Demonstration in Bee Culture, C. B. Gooderham, Dominion Apiarist, Experiment Farm, Ottawa, Canada.

Apiary Inspectors of America—Chairman, Charles A. Reese, Columbus, Ohio.

Spinster Jane Says

The Unusual Spring

March has certainly proved herself an unpredictable jade. She promised us an extra early spring, and handed out a sample of weather, warm and balmy, such as we could expect from May. Then she left her whole bag of tricks for April to try out on us. We had snow and hail, thunder and lightning, then gales of icy wind—wind that made us fear the roof might be wrenched off from over our heads. But now that April has completed March's work, we are having real April weather at last, though the blow persists daily, this far.

Our bees, wrapped snugly in tarred building paper, and all wintered outside, came through with far less loss than when wintered in our cold damp cellar. During those balmy days in March, Boy was able to examine all, and they were able to fly everywhere. How pleasant their hum and busy flight after the long winter silence!

Any colonies that we lost starved to death in the upper super, with abundance of honey just beneath them. We understand it was the cold that drove them up where the heat was. Had all been males, could one have urged them away from good food, or is it because females prefer warmth and comfort rather than food? These frames of honey, so left, come in fine for spring feeding, but in spite of this help in the feeding problem, Boy has already fed one bag of sugar.

Every time he has his day off, it has been so cold and windy he dared not open up the hives to see how the bees are faring or to see if there is any shortage of food.

Right now, pollen is fairly dripping from willow and alder tassels, and what a pity the little workers are shut in so much of the time! There is, too, a deal of nectar to be gleaned. In cutting our summer supply of wood, the birch trees yield a sap, sweet as that of the maples, and where the sawdust lies after sawing wood, thousands of bees gather to carry home the precious bit of nectar to their expected brood.

These high winds cause drifting, and make their loads hard indeed to bring safely home. These busy gleaners dislike stopping to rest en route home, and wear out their wings and their lives by the extra energy exerted.

Boy has burned the accumulation of dry grass in his new second yard, and now intends plowing and cultivating the ground all about it, and sowing sweet clover there. His dad, when he sows it on the farm, cuts it when it first comes into bloom and before the stalks become woody and unfit for feed. He will let it continue to bloom as long as it will, then allow it to seed itself for the next season. This seems sensible. It will save wear and tear on the bees, short hauls, and more trips in a day. Should not every beekeeper depend on his own bee pasture rather than on his neighbor's?

And on this 10th day of April our bees continue snugly wrapped in their winter covering, no doubt murmuring, as we do, because the winds continue to blow, making flight a risky venture.

Bee Industries Association—Chairman, Alan Root, Medina, Ohio; Secretary, R. E. Dadant, Hamilton, Illinois.
National Federation of State Beekeepers' Association—President, John Holzberlein, Jr., Grand Valley, Colo.; Secretary, V. G. Milum, Champaign, Ills.
Beekeeping War Council—Chairman, Woodrow Miller, Colton, Calif.; Secretary, Roy A Grout, Hamilton, Ills.
Southern States Beekeepers' Federation—President, P. G. Craddock, Tifton, Ga.
American Honey Institute—Chairman, Lewis W. Parks, Madison, Wisconsin.
National Honey Association—Chairman, John G. Paton, New York, N. Y.
Canadian Beekeepers' Council—Secretary, R. M. Pugh, Fort Qu'Appelle, Sask.
Texas Apicultural Research Laboratory—H. B. Parks, San Antonio, Texas.
Extension Specialists in Beekeeping—Alabama, W. A. Ruffin, Auburn; Alberta, W. G. leMaistre, Edmonton; British Columbia, W. H. Turnbull, Vernon; California, J. E. Eckert, Davis; Connecticut, Elbra L. Baker, Brooklyn; Delaware, Paul R. Rice, Newark; Georgia, P. G. Craddock, Tifton; Illinois, V. G. Milum, Urbana; Indiana, G. E. Lehker, Lafayette, Iowa, F. B. Paddock, Ames; Louisiana, J. B. Garrett, Baton Rouge; Maryland, George J. Abrams, College Park; Michigan, R. H. Kelty, East Lansing; Mississippi, Clay Lyle (part time), State College; Missouri, Leonard Haseman, Columbia; New Hampshire, J. R. Hepler, Durham; New York, E. J. Dyce, Ithaca; North Carolina, J. Myron Maxwell, Raleigh; Nova Scotia, H. G. Payne, Truro; Ohio, W. E. Dunham, Columbus; Oklahoma, C. F. Stiles, Stillwater; Ontario, G. F. Townsend, Guelph; Saskatchewan, Provincial Apiarist; South Carolina, E. S. Prevost, Clemson; Tennessee, G. M. Bentley, Knoxville; Wisconsin, H J. Rahmlow, Madison. (Where we did not hear from a state we repeated last year's listing.)

Asked and Answered

Maximum Number of Colonies For Each Apiary

Question.—Your chance remark in Jan. 1945 Gleanings interested me very much, regarding keeping over two hundred colonies in one place, and I would very much appreciate knowing of a few of your personal observations. My brother and I each have over 100 and we both intend to keep more. What would you consider an advisable limit, as I consider we have an ideal location.—Earl N. Butler, Ontario.

Answer.—It is possible to have 200 colonies of bees in one location provided there is an abundance of nectar and pollen available. It seems that the majority of locations should have a lesser amount of colonies. Apiaries from 2½ to 4 miles apart should do well if the territory is good. If there should be a considerable amount of small apiaries scattered around within the area, such scattered colonies would have to be taken into consideration in estimating the amount of pasture available for the bees. Here is something to think about: If it were possible to have a series of 100 colony yards, 4 miles apart in all directions, each apiary would have access to approximately 10,000 acres. This would make 100 acres available for each colony. If each 100 acre farm had 10 acres of clover, there would be 10 acres of clover for each hive of bees. This hardly seems possible until one gets his pencil and paper to figure it out. In a word, it is a little difficult to overstock a region that is favorable for honey production and it may be easy to overstock a locality not favorable for beekeeping.

Demareeing

Question.—What is Demareeing?—Dr. T. B. Tayman, Mo.

Answer.—The term "Demaree" originates from the name of the man, Mr. Demaree of Kentucky, who brought out this system of swarm control about 50 years ago. Briefly, it consists of raising all combs of brood except one out of the brood chamber below into one or more of the supers above the queen excluder. The queen with one comb of brood is left in the lower chamber and the space is filled with either frames containing full sheet of foundation or drawn comb. This manipulation separates the queen from most of the brood and thus relieves congestion in the hive which in turn prevents swarming in the majority of cases. It is well to destroy all queen cells that are built in the brood combs lifted above the excluder nine days after the brood is raised. This prevents virgin queens from emerging. When Demareeing is done at the beginning of a honey flow the bees will fill the brood combs with honey as fast as the young bees emerge. This swarm control measure keeps the colony intact during the honey flow and results in a larger crop of surplus honey. When swarming is permitted, the colony is divided and less surplus honey is likely to be secured. However, when more colonies are needed for increase, swarming is sometimes permitted.

Painting Hives Occupied With Bees

Question.—Is it safe to paint hive bodies while they are occupied by bees? I have four colonies in unpainted hives and have been told that the paint fumes will kill the bees if painted now.—C. H. Marlow, W. Va.

Answer. It is perfectly possible, in fact feasible, to paint hive bodies that are occupied by bees. If you are careful not to obstruct the entrance while you paint the front of the hives the bees are not likely to object to your painting. It is well to leave the alighting board in front until the bees have returned from the fields late in the evening before applying paint. The paint fumes will not harm the bees.

Requeening Swarms

Question.—Is it advisable to requeen swarms?—Joseph S. Higginbotham, Va.

Answer.—It is considered good practice to do so as swarms are usually accompanied by queens that are beginning to outlive their usefulness. One can usually tell from the appearance of the brood, also the queen, whether or not she should be replaced with another queen. If the brood is found in solid areas, rather than in cells that are scattered, and if the queen appears to be vigorous and doing good work, she should be left in the hive. Quite often the bees will automatically supersede a queen that is beginning to fail. It seems that the bees usually know better than the owner when a new queen is needed.

Just News

The New Rochelle Beekeepers' Association will hold its regular monthly meeting on Sunday, May 20, at 2:30 p. m. at the home of Mr. and Mrs. Sylvester Barnes, 325 Webster Avenue, New Rochelle, N. Y. For this particular meeting the ladies will conduct the business end of the meeting while the men will be responsible for the refreshments. Weather permitting a hive demonstration will be given.—A. M. Barnes, Ass't. Sec.

The first outdoor meeting of the year will be held by the **Middlesex County Beekeepers' Association** on Saturday, May 26 at 2 p. m., at the bee and wildflower garden camp of Mr. and Mrs. Charles M. Lamprey, on the Boston Post Road in Sudbury, Massachusetts, just beyond the Davis Turkey Farm sign. A. M. Southwick.

The Third Annual Beekeepers' Short Course sponsored by the University of Minnesota will be held May 10 to 12 at the Administration Building, St. Paul. The fee for the course is $3.00. Anyone interested may attend. For further information write M. H. Haydak of the University.

The Bronx County Beekeepers' Association will hold its regular monthly meeting on Sunday, May 13, 2:30 p. m., at the home of Mrs. Grace Bowen, 1336 Balcom Ave., Bronx. New officers are to be elected for the coming year. We will also open and examine the hives of our hostess.—Harry Newman, Sec.

The annual meeting of the Lehigh Valley Beekeepers' Association was held at the home of the Secretary, Mrs. Howard Dennis at Allentown, Pennsylvania. A very successful year was terminated under the guidance of the President, Mr. Flovd Sandt, who was reelected for the present year. The other officers for 1945 are Mr. A. Trainer of Allentown, Vice President, and Mrs. Howard Dennis, Secretary-Treasurer. Several interesting meetings have been planned for this year. The first will be held on May 5 at the home of Professor E. B. Everitt at Allentown, Pennsylvania.—R. H. Meier,

Cuyahoga County Beekeepers.—At 2 p. m., Sunday afternoon, May 13, we're meeting at Fred Haessler's City Apiary, 14243 Bayes Ave., Lakewood. Take Madison car to Brown Road and walk a block south to Bayes Ave. If you're fortunate enough to have gasoline, park across the street in the school yard. Fred, a 73-year-old beekeeper, has 17 colonies that we're going to take apart and build up again. Will you give us a hand? Just bring your veil. Everyone's welcome! — Ed Johnson, Sec'y.

John M. Amos, formerly extension apiarist for Pennsylvania, is now state apiarist for Tennessee at Nashville, to succeed George H. Rea who is retiring.

He takes over the work in Tennessee well qualified and in a state with great opportunities in both beekeeping and entomology. While heading beekeeping he will assist Professor G. M. Bentley who has ably carried the entomology load for nearly 40 years and during the same years he has been a booster and pillar of strength for beekeeping.

Mr. Amos was born about 35 years ago in Mulberry, Indiana. He was an honor student in High School and a distinguished student at Purdue University, Lafayette, Indiana, where he received degrees of B. S. A. and M. S. A. in 1932 and 1933. He had various positions with Purdue Agricultural Experiment Station and U.S.D.A. Bureau of Entomology and Plant Quarantine. He had a fellowship in Crop Protection Institute at Purdue, was Assistant Entomologist in Extension Service, Newark, Delaware and Extension Apiculturist at State College, Pennsylvania. He has published numerous bulletins and circulars on his work. Regardless of all his high sounding titles and experiences there is nothing of fanfare about him. He goes about his work deliberately, with no assumption of his own importance but with ability to inspire the confidence and cooperation of those with whom he works.

Editorials

Don't worry about D D T. See page 201 of this issue.

The activities of the National Federation of State Beekeepers' Associations are well set forth in the April report. Send to V. G. Milum, Champaign, Ills., for a copy.

It is estimated that the amount of sugar available per capita will be approximately 78 pounds during the coming year. This is about 20% under pre-war use and about 12% under the 1944 use. So long as the supply of sugar is less than normal requirements the demand for honey should continue strong.

"Your Health. Honey," is the title of a syndicated article by Dr. Maurice Fishbein, editor of the American Medical Journal and of Hygeia, that is highly complimentary to honey. Such a fine statement coming from the highest medical authority in this country will mean much not only to the general public but to the medical fraternity at large. It will mean also that mothers will buy honey for their babies, and old people with defective assimilation will find honey a panacea against hyperacidity.

The new doctrine of Wintering has again, after the past severe winter, proven its value. When the requirements are properly met, viz., plenty of honey and pollen, young bees, very strong colonies occupying two Langstroth full-depth hive bodies, having upper as well as lower entrances, such colonies will survive even a severe winter. This does not mean that packing or insulation of the hives has no value. That depends on the location or how cold the prevailing winter weather is. But in most localities the possible slight gain in packing is offset by the expense, especially for outyards with a mileage cost of five cents a mile to and from the yards.

One Extreme Follows Another The lamblike spring weather which prevailed in the North during late March and early April was followed by frost, ice, and, in some regions, snow. Considerable damage was done to early fruit.

The warm weather and abundance of pollen gave normal colonies a tremendous "boost" in brood rearing. We do not recall having seen such a heavy pollen flow so early in the season. Fortunately the prolonged early warm spell gave colonies a chance to develop some sealed brood with emerging young bees, before the cold weather came.

The spring of 1944 was unusually late in the North. This is one of the earliest springs on record.

"The Honeybees Real Job" This is the title of an article by F. S. Crawford, in the magazine, "Your Farm," published monthly at Chicago, James A. Rice, Editor and Publisher. This is a publication on the order of "Readers' Digest," a compact form of the best material from authoritative sources on general farming subjects. If all of the articles in this April issue are as up-to-date as this one on honeybees, it will be a great boon to agriculture, now that there is such an enormous demand for food, especially the kind of food that bees are able to furnish, honey, more and better fruit, and a great increase in dairy products—milk, butter and cheese.

We quote:

Exhaustive research work by the U. S. Department of Agriculture shows definitely the importance of this pollinating work. Yet the indifference of farmers and others toward bee culture, and perhaps our ignorance of the honeybee's real pollinating value to crops is responsible for the lagging interest. • • • The Bureau of Entomology and Plant Quarantine issues a bulletin on this particular phase of farming, showing that when nature has a proper balance between plants and pollinating insects, both plants and insects flourish, but due to modern farm methods and the wholesale extermination of wild pollinators, the job is left largely up to the honeybees—and while killing the destructive insects by the spray process, they also kill off the honeybees.

And then it adds this paragraph which ought to be placed in the hands of every farmer, every beekeeper, in fact, the whole population of the United States. Here it is:

Some species of flies, some bugs and wild bees are pollen distributors but are considered of minor importance since they are subject to the vicissitudes of nature and their natural enemies, including man.

and through man's various and often thoughtless activities, he is the greatest disturber of nature's plan of things.

The author must have gathered his material largely from the officials of the U. S. Department of Agriculture, particularly those in the Bee Culture Laboratory, under the supervision of James I. Hambleton, Beltsville, Maryland. The article in question bears all the ear-marks of Hambleton's statements.

If the Bee Culture Laboratory had done no more than to bring out these facts now set forth in Circular E-584, by U. S. Dept. of Agriculture, it would have been worth all its cost. Hambleton and his staff have done a magnificent job.

Value of Full Food Chambers

A few years ago while attending a nearby county bee meeting during April a beekeeper said his food chambers contained so much honey that he didn't think the bees would need it all. We advised him to leave it on the hives rather than remove a portion of it. If the bees did not use all of the honey in the spring it would be there for future needs.

Usually there is a period between fruit bloom and clover in most localities when very little nectar is available. At that time brood rearing is proceeding rapidly and much honey and pollen is needed. It is surprising how quickly combs of honey disappear and are converted into combs of brood. It is estimated that it takes approximately one comb of honey to produce one comb of brood.

It pays big dividends to err on the side of safety and have too much rather than too little honey for each colony. If perchance the honey is not used up before the major honey flow comes the extra honey is not wasted, because, the bees have that much less to store in the food chamber for winter food.

Important Information for Sowing of Sweet Clover this Spring

The Agricultural Extension Service, Dept. of Agronomy, Ohio State University, has issued Bulletin 261, "Choosing and Sowing Meadow and Pasture Seedings". It is important to farmers and beekeepers. Farmers should know what kind of seeds, legumes, and grasses to plant for their particular soil condition. Beekeepers should know what clovers are important.

The planting season is now on. For most localities a mixed seeding, composed of clovers and grasses, is more profitable to the farmer than the sowing of any one crop. In many localities in Ohio, Wisconsin, Michigan, and Minnesota, sweet clover is conspicuous by its absence, and in its place there is red clover and soybeans.. Sweet clover stands out as a splendid pasture crop for cattle growing where the soil is sufficiently alkaline.

It is known that soybeans rob the soil of its fertility. Sweet clover is the most important legume to restore the soil. The farmer should understand this and the beekeeper should bring these facts to the attention of the farmer; otherwise, he will lose some of the sources of honey so important just now in helping to supplement the shortage of sugar.

Short Cuts Essential in Apiary Work

The present labor situation has driven some of us to more sensible and sane methods of apiary management. When we find that some short cuts actually do work, we wonder why we hadn't thought of them before.

During the active season the two most important requirements are **food** and **comb space.** Obviously, it is more economical to let the bees feed themselves (which they will do under normal conditions, if permitted) than to be everlastingly "toting" sugar syrup or combs of honey to the hives. Most of us take away too much honey in the fall and expect colonies to go along on starvation rations. Maximum crops of honey are not secured in that way. Bees must have plenty to eat—honey and pollen—especially during the spring months.

Some of us fail to get supers on in time and in sufficient quantity to prevent preparations for swarming. It does no harm to put supers on early where colonies are populous. Instead of running empty or partly loaded to out yards prior to the major flow, take full loads of supers. They will then be there when needed.

In a word, using short cuts simply means planning ahead intelligently, then working the plan.

Legume Subsidy Bill According to the March, 1945, issue of "Southern Seedsman" the proposed $15,000,000 subsidy program designed to stimulate the production of legume seeds will have action by Congress in the near future. This bill applies to alfalfa, alsike clover, medium red, and mammoth red clover. It seems unfortunate for beekeepers that sweet clover is not included, as it is considered one of the most important legumes for maintaining and restoring soil fertility, so much needed at present.

Maximum Honey Price Regulation Revised and Amended The Office of Price Administration revised and amended Maximum Price Regulation No. 275 covering the price of bulk and packaged honey on March 19, 1945. This Regulation has been in effect since December 3, 1942, and has been amended several times previously.

Regulation No. 275 as originally drawn up named producer maximum prices in bulk and provided two methods by which a seller of package honey could determine his maximum selling price. No change has been made in bulk honey prices which remain 11½c per pound without container and 12c with container F.O.B. producer's local shipping point. To consumers the price is 15c per pound.

The first method of determining packaged honey ceilings established prices on the basis of a formula which permitted a seller an increase over his own base period selling price. The second method established selling prices on the basis of a dollar and cent maximum price table for each size of package honey.

These two methods are retained in the new amended Regulation No. 275 and in addition sellers who pack honey in fancy containers, or sizes of packages, not included in the table are permitted to obtain an order from the Price Administrator establishing a maximum price or setting out a method of determining a maximum price upon the filing of an application. The application must show the facts which make different prices necessary and a statement of the cost of these special packs.

The Order also permits a 3c premium over the prices established for ordinary bulk honey for honey packed under the Dyce process. The order limits this 3c premium to honey processed by this patented process but states that other similar processes could be handled in a like manner on application to the Administrator where similar costs are shown. The Order also designates as an evasion of the Regulation by persons purchasing honey the selling of containers to their suppliers at less than cost of the container, if the container is a new one and at less than the market value of the container if it is a used container.

Buying agent commissions by this revision are limited to ½c per pound. A copy of the full regulations may be obtained by writing to the Office of Price Administration, Washington 25, D. C.

When Bees Won't Take Pollen Substitutes Unless there is a scarcity of natural pollen in the field or in the hive, bees will pay little or no attention to pollen substitutes placed in trays outdoors or in the hive. This means either straight soybean flour alone or soybean flour and skim milk powder mixed.

This year on account of early warm weather in March and April, there was a most unusual plethora of pollen in many if not most localities. Combs were plugged with pollen. When the pollen is available bees won't even go near a substitute outdoors.

On the other hand, when there is a shortage of natural pollen both in the field and in the hive, bees will rush to cattle feed troughs and to chicken coops, and if a substitute is given in the trays outdoors, they will rush at it in force. At such times they will carry in sawdust or even coal dust. You would think they would know better.

When a substitute or supplement is mixed with syrup and molded into patties and placed on frames inside the hive early **before** bees can collect pollen they will take it and start vigorous brood rearing. To give them patties after natural pollen is available is a waste of effort and material unless there is a shortage in the field.

From North, East, West and South

SOUTHERN CALIFORNIA, April 3

Weather: Continued cool weather caused a large consumption of stores. Normal brood rearing and little or no nectar coming in makes feeding necessary in many apiaries. Weather remained cool until March 29th. Since then we have had some warm, high drying winds and warm days. Today it is cool again. Those few warm days caused the alfilerae to shoot up and blossom and judging from the way the bees went after it they should soon be getting enough to carry on. Oranges will soon be starting to bloom. The buds are swelling and soon will be a mass of white, so here is hoping for warm weather the latter half of April and the first half of May.

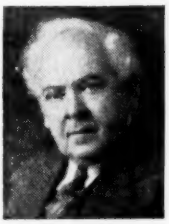
Honey Crop: Many beekeepers are beginning to wonder what the prospects are for a honey crop in 1945. To date we have about an average rainfall. Usually we get some rain after this date. Rain is our first requisite for a honey crop. Next comes weather conditions which are quite a factor. Colony strength is necessary if the honey flow is short but if it is long continued even medium strength colonies will often give very satisfactory results. With present prospects we would say the probability of a large crop is very remote and the chances of a half crop are good.

Miscellaneous: Swarms have been reported for a week or more. Same old story. People call up and say, there is a swarm hanging on a bush in my yard, or there is a swarm in my house. Can you come and get them or tell me where I can get a man to do the job? Usually there is a man who will do this kind of work, but the demand for labor and the small honey crops have made the men very scarce. There is room for some thought along these lines as the problem comes up year after year. In a neighboring city a few years ago we met a man who called himself the official bee catcher. All reports along these lines were referred to him. He took care of the situation and if the job was worth more than the bees and honey he got, he was paid for his services.

Cooperating marketing of our honey and wax has been the principal topic of conversation at a number of meetings of beekeepers held throughout California during the past few months. With the price of honey as high as it is most beekeepers are satisfied to sell their own honey. But this question of cooperative marketing is not one to be put lightly aside. It is getting to be one of almost national issue. Honey and beeswax are comparatively small compared to the volume of some other commodities handled by cooperatives.

Very little disease is reported and colonies having from four to ten frames of brood are all ready to go and if the weather would moderate about 20 degrees we would be sitting nicely.—L. L. Andrews, Corona, Calif.

NORTHERN CALIFORNIA, April 3



Weather: March badly upset the Lion and Lamb rule of March coming in like a lamb will go out like a lion, and vice versa. The first two days of March were mild, a slight trace of rain, no wind, no cold. The last two days were the warmest, pleasantest days any of us would care to see. The thermometer registered 70 and Easter Sunday was an ideal day.

Here in the Bay area we have had plenty of rain, in fact, we are still above normal. In the mountains there has been a lot of snow this winter. As late as last week there were eight feet reported at the summit. No complaints from beekeepers for they know that under that snow the buds are swelling and by the time they can get their bees in there will be plenty of blossoms.

The rains of March have improved the prospect for a good crop. Very few points show less than the normal amount of rainfall. Plant growth is very satisfactory. The demand for bees for the pollination in the orange, almond, and prune orchards has been heavier this season than usual.

Condition of Bees and Prospects for 1945: The condition of bees when the long winter is past is one that concerns all good beekeepers. When we learned that we must send in such a report for March and April for Northern California we did not feel able to do the subject justice. This is a country of long distances and gas is short. So instead of depending on ourselves for the report of conditions as they are at this time we asked six of our up-to-date beekeepers who believe in the future of the industry to tell us for publication, the prospect they see for a crop in 1945. Five of them responded with the best report we have had in 25 years. All five agree that much depends on the condition the bees were left in at the end of the last season. This means good queens, plenty of young bees, and ample stores. This has been our aim for several years.

As far as we can see all we need now is the right weather conditions and plenty for the bees to work on. One more important suggestion, and that is that the lives of bees be protected throughout the season.

The mail is just in and it includes the report of the one we said had failed us. His is also a good report. He closes his letter with, "We are told by specialists to do our part as well as the bees do theirs and the crop of 1945 will be assured."—Cary W. Hartman, Oakland, Calif.

TEXAS, April 7

Weather: Most of South Texas has been almost frostless. The last general frost as far north as San Antonio occurred January 10th. This warm winter brought the spring honey plants into bloom long before their regular time and dry weather with above normal temperature caused these plants to complete their bloom quickly. Thus, while **Mexican persimmon Diosphyros Texana Scheele** produced a heavy bloom the period was so short that it furnished little nectar. **Guayacan Portieria augustifolia (Engelm)** A Gray bloomed in profusion but ended before the bees could use much of it. Dozens of other nectar and pollen plants have made heavy blooms of short duration. Now **Mesquite Prosopis chilensis (Molina) Stutz** has started and promises big things but we will wait for next month to report. As for the bees they are in fine shape wherever they had proper attention last fall. .

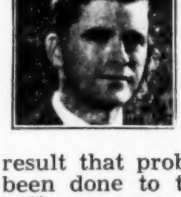
Miscellaneous: We had a new proposition made to us last week—plastic bee fixtures cast in units, which cannot be broken or gnawed by the bees, including movable standard combs, with a plastic foundation coated with pure beeswax. If it can be made it will be a help.

Some years it was demonstrated that much of the poisoning that results from scraping sections, frames, and other bee equipment came from plant hair from Rhus species of poison ivy, which bees mix with other substances in making propolis. This week numerous worker bees were observed collecting pollen and plant hair from **Toxicodendron quercifolium Steud.** This is the low shrublike poison ivy of the sandy soils. This mixture of green pollen and plant hair could be found in many hives as a new addition to the already abundant supply of bee glue.

The beekeeping conditions have now reached the place where the honeybee is of greater value as a pollinator than as a honey producer. A new and better day is dawning for the bee world.

With the world war coming to a close we can only wonder what part the beekeepers of America will be called upon for restoration of the bee yards of Euro-Asia. We know that the losses over there are great and that help will be necessary. One well known beekeeper writes, "A bomb picked out my apiary and all that is left is a hole."—H. B. Parks, San Antonio, Texas.

NORTH DAKOTA, April 7



Weather: April came in like the proverbial "lion," with a snowstorm and blustery weather for the opening day. The temperatures, however, did not go much below freezing, with the result that probably little harm has been done to the early nectar and pollen sources. The weather has warmed up considerably in the last

day or so and bees have resumed gathering.

Locally, the cellar wintered bees were moved out of doors during the week of March 12th, which is earlier than usual. The owners report that their bees wintered fairly well, but consumed more stores than usual. Prompt feeding of the lighter colonies was necessary to prevent starvation. No difficulty in obtaining the necessary amount of sugar for early feeding has as yet been reported.

Bees are now gathering from elm and maple, and it will be only a short while until willows, dandelion, and fruit bloom are available. A growing interest in the feeding of pollen substitute is being manifest of late, and the formulae for pollen substitute, developed by the U. S. Bee Culture Laboratory and the Minnesota Experiment Station are being used to answer the many inquiries received. Beekeepers who are obliged to feed pollen substitutes would do well to have an adequate supply of the proper type of soybean flour and other ingredients on hand early, because there is probably little to be gained by feeding the substitute after the natural sources have become readily available. The management of the bee journals are to be complimented on publishing timely articles on this subject.

Condition of Plants: Sweet clover appears to have come through the winter in good condition. The plants were showing green growth during the week of March 26. A few weevils were then observed at work, but the damage to the leaves was slight. Other plants, including alfalfa, have probably come through satisfactorily because of the mild type of winter.

Miscellaneous: Excellent use has been made of the remarkably fine honey recipe bulletin and pamphlet recently issued by the American Honey Institute. A quantity was secured by the North Dakota Beekeeper's Association and distributed to its members, and many others interested. One of the copies was sent to the editor of the women's page of the local paper, with the result that a most favorable comment was made on honey recipes in the recent Sunday issue.

The time and place has not been decided for the summer meeting. Suggestions on the type of program wanted and the place and time to be held should be sent to Mr. Charles Hausmann, President, Hillsboro, N. Dak., or to Mr. Arvid Benson, Sec.-Treas., Moorehead, Minn.—J. A. Munro, Fargo, N. Dak.

NEBRASKA, April 7

Weather: Ironically enough the heaviest snowfall of the season came to Nebraska in April—in fact, the heaviest April snowfall in history. Imagine being snowbound in April! Farmers had removed snow fences to do field work, and the snow, driven by high winds, drifted badly blocking roads and stalling traffic. Only once before this winter did we have to do any shoveling, as the few snows we had were light enough to sweep off with a broom. Before the big storm, bees were working nicely on apricot and plum blossoms and a few daring dandelion heads. Horticulturist experts announce that all fruits with the exception of late apples are gone. Much of this loss was on trees that were replants from the big freeze of November, 1941, and were coming into bearing for the first time. Though we have had steady cold weather throughout the winter months, with many cloudy days and little moisture, the weather has been favorable for both bees and honey plants.

Colony Conditions: Bees seem to have come through the winter in good condition. There are, of course, a few weak colonies that we always seem to have with us. Freezing of most of the fruit bloom is regrettable, however, the bees will have dandelion and some late apple fruit bloom. Liberal feeding of sugar syrup will pay big dividends.

Prospects: At the present time prospects for a good crop are fine. Light, but quite frequent moisture, coupled with good subsoil moisture has kept the honey plants in excellent condition.

Markets: Honey sales are brisk with dark honey moving well. Bakery trade is anxious for this type of honey and is capitalizing on the advertising punch that honey always seems to have in describing and selling of bakery products.—Benj. Nielsen, Aurora, Nebr.

COLORADO, April 2

Weather: The past fall, winter and early spring have been quite satisfactory from the standpoint of the Western Colorado beekeeper. In the first place bees filled the hives better last fall than for many years. Rabbit brush and asters yielded throughout most of October and there was no killing frost until November 8 here at Grand Valley. On election day we had fresh peaches from our orchard and tomatoes from our garden. (This for those of you who still think Colorado has a semi-arctic climate —of course it has been snowing all day today, but that doesn't count.)

The winter progressed with no great extremes and without a month in which the bees failed to get a good flight. There has been ample moisture to soak the soil in the valleys and pile the snow high in the hills. Water for irrigation next summer is assured.

Spring to date has been stormy, confining the bees to the hive most of the time. Many of us have come to look upon this as a favorable situation, especially when there are no blossoms anyhow and temperatures are not too low.

Condition of Bees: Bees are in the condition that would be indicated by the foregoing weather report. What little winter loss has been suffered has been from queenlessness and other minor disorders. There are a few local areas where starvation has occurred, but it is the exception where good beekeeping practices have been followed. Most of our own colonies have brood in five or six combs and are nibbling on their second or third pollen pancake. They really love them. Our days of buying "booster" packages are over. And once into it, feeding a pollen supplement is no great chore for it comes at a time when there is little else to do. Many Western Colorado beekeepers plan to trap pollen this summer for there are too many days at this time each spring when bees cannot leave the hive.

Prospects: It is too early to make predictions, but if the season follows the indicated trend the beekeeper may well blame himself first if he fails to get a crop in '45 in these parts.

Miscellaneous: Honey continues to move satisfactorily here. Those who supply the grocers predict a sell-out before new crop is available.

Beekeepers are showing new enthusiasm for national organization. Quite a number of Colorado's leading beekeepers have come to the support of the National Federation with individual memberships.—John W. Holzberlein, Jr., Grand Valley, Colorado.

MISSISSIPPI, April 5

Weather: The winter was unusually mild and all colonies with plenty of stores came through in fine condition. We have had a very early spring and reports from all sections of the state indicate that colonies are very strong where food was available. Some swarming was reported by March 31. Heavy, frequent rains have prevented much nectar-gathering over most of the state, but a few localities report at least one super already filled. At Wiggins, about 30 miles from the Gulf, one colony had capped 11 full-depth frames and a shallow super by April 1. Most plants were about a month earlier than usual. Tung trees in South Mississippi were reported giving a heavy flow, which is unusual. White Dutch clover in the Delta looks promising but the frequent rains may prevent much storing. At State College vetch usually gives a fine flow in April and May, but weather conditions are unfavorable at present.

Miscellaneous: Package shippers are booked to the limit and seriously handicapped by the shortage of labor. After unusually warm weather for the past month, a sudden cold snap today with temperatures approaching freezing at State College may give the production of queens and package bees a serious setback.

Mississippi usually produces honey for local consumption only and the supply is about exhausted. In fact, some beekeepers sold out several months ago. Prices in general are near the ceiling but some beekeepers are still supplying their local customers at only slight advances over pre-war figures.—Clay Lyle, State College, Mississippi.

SASKATCHEWAN, April 6

Weather: This last winter has been unusually mild, with enough warm, bright days interspersed throughout the cold weather to give the bees four or five flights during the winter period. Spring came very early and practically all our snow was gone by mid-March, a month to a month and a half ahead of schedule. Bees were flying freely during the latter part of March and the first few days of April. However, there is no pollen for them to get. This early fine weather during March and April is unusual with us and, ordinarily, our bees are not able to have many flights before pollen is available from crocus and willow. This is, therefore, one of those unusual years, and a year where the feeding of pollen substitute would probably be beneficial to our bees. In the average year there is such a wealth of natural pollen that it is unlikely they would receive any benefit from the substitute.

Condition of Bees: Reports we have received so far show that colonies wintered in the cellar and which are now being put out appear to have wintered very successfully and a less than normal loss is anticipated. Colonies wintered out-of-doors also appear to have come through the winter in good shape except where they did not have adequate stores of good quality. In the southern part of the province last year there was a considerable amount of honeydew honey and this granulated so solidly that bees were unable to use it over winter and, therefore, if bees were not given frames of good quality honey or good sugar syrup such colonies had a very difficult time surviving and most loss was experienced among colonies on this feed.

Miscellaneous: The demand for package bees has been heavy and it has not been possible to enlarge the supply of packages for early delivery as required and many beekeepers are having to take delivery dates in May which is rather risky in this province if the spring turns out at all early.

Whether or not the war carries through the summer it is likely honey will continue in good demand for the coming year, owing to the world shortage of sugar, and beekeepers can look forward to marketing their maximum production at a good price for the next twelve months.—R. M. Pugh, Fort Qu-Appelle, Sask.

INDIANA, April 6

Weather: It has been a cold and snowy winter with temperature below zero on numerous occasions. From December 10 deep snows covered the unfrozen ground, melting about February 20 with little or no run-off. Heavy April rains have provided ample moisture and clover appears plentiful and in prime condition. Although confined to the hives from December 10 to February 24, our 50 two-story colonies with top and bottom openings and no packing came through the winter in good condition.

Bees in northern Indiana began gathering pollen from soft maple March 15, weeks earlier than usual, and with the unusually warm weather and the blooming of elm, box elder, and other trees, have secured an abundance of pollen and some nectar. These conditions should enable even weak colonies to survive and I understand that there are a considerable number of them in this vicinity. In case of weak colonies it is a good practice to set them on the top of strong ones with excluders between. They may be divided later or retained as dual queen colonies if desired. Uniting adjacent colonies for the honey flow may be preferable to the two-queen scheme with one atop the other, the only advantage of the latter being to conserve heat in early spring, possibly allowing them to build up faster.

Consumer demand for honey remains good and the 1944 crop will no doubt be disposed of before the new crop arrives. By continuous use of the classified ads in our local newspaper we have been able to dispose of several tons of honey at ceiling prices direct to consumers, many of whom bring containers.—E. S. Miller, Valparaiso, Indiana.

IOWA, April 7

Conditions: Reports indicate colonies have come through the winter in better condition than has been experienced for the last three years. It is hoped that this start may be developed through the spring so the colonies will enter the summer honey bloom period in excellent condition.

Beekeepers will be inclined to depend to a greater extent than normal upon wintered-over colonies for gathering a crop of honey in 1945. The experiences of the last three years in obtaining package bees has not been entirely satisfactory. This coupled with the reduced pasturage forces a conservative program on honey producers at this time.

The demand for war crops has made it necessary to reduce clover plantings to a minimum. In fact, the clover plantings have been restricted to the acreages which were set aside for legume seed production. The planting intentions now recorded by Iowa farmers indicate a slight increase in the acreage of corn over that of any previous year. It is recognized that the war program has called upon the soil fertility to the extent that a problem of rebuilding soil fertility immediately following the war demands is the number one problem of farm crop agencies.

Miscellaneous: The inspection season for 1945 officially opened on April 1 at which time the inspectors began their field activities. Two new counties have been added during the winter to the list which is cooperating with the state apiarist in the area clean-up program on the county basis. A total of 34 counties representing over one third of the state is carrying forward this area cleanup program for the control of bee diseases.

A comprehensive program of demonstrations will be set up under the direction of the farm crops section of the Iowa Experiment Station to study the behavior of bees in the pollination of red clover and the effectiveness of bees in seed sets. This work will be conducted in three counties distributed throughout the red clover growing area of the state. This organized effort follows a considerable popular demand for the use of bees in connection with improving the set of red clover seed. There were many instances of personal cooperation in the fall of 1944 between seed growers and beekeepers for the purpose of improving seed sets. The results in every instance were highly satisfactory since it was evident that the seed harvested had been increased two or three times.

It is with great regret that we record the passing of E. M. Cole of Audubon, Iowa, on March 13. Mr. Cole had long been a figure in Iowa and national beekeeping circles. His writings were known to many who never had the privilege of meeting him. Mr. Cole's knowledge of bee behavior was probably not exceeded by anyone now living. He was an unusual student of the activities of bees and his observations were always supported by unlimited reading. Fifteen years ago he donated to the Iowa State College library a very fine collection of very old books on the subject of bees. Mr. Cole's enthusiasm and interest in attempting to delve further into the behavior of bees was an inspiration to anyone who came in contact with him for discussion. — Prof. F. B. Paddock, Ames, Iowa.

MASSACHUSETTS, March 28

Weather: Winter losses appear to be normal in spite of a very cold winter in Massachusetts, and this appears to be true for Maine, while Connecticut reports above normal losses. Snow has offered some protection to bees during this cold, but the opportunity for bee flights from November to early March were none too plentiful and of short duration. My own bees enjoyed several short flight periods about once a month, sometimes lasting only for an hour or two, but sufficient for them to spot the snow and return to the cluster with renewed energy. The upper flight holes were very useful this winter especially after the February blizzard.

Spring has come on two weeks ahead of normal. Bees were gathering natural pollen from poplar and the cut-leaf maple here on March 18. I have never seen this type of weath-

er in March, and sometimes April is much colder with much less opportunity for bee flight. The writer started feeding the pollen substitutes on March 4 intending to start about a month before natural pollen was available. It was exactly two weeks to the first pollen, instead of a month so the results may be different from what was expected. Queens are reaching their full laying capacity and building up rapidly. If the buds of the fruit trees develop at the same rate as other vegetation, we may expect fruit bloom to be quite close to May 1 instead of a week or two after the first. This will give beekeepers much less time to prepare for orchard rental, but I expect the bees will be ready.

The package bee and queen situation appears to be a hard one to solve. Nearly every shipper reports being sold out on early deliveries of package bees. Late deliveries here are of very little value for gathering a honey crop. It has been my experience that bees must be established close to April 15 to give good returns. If brood can be spared from extra strong colonies to build up the late arrivals, they will of course give good results. Unassisted package bees require at least eight weeks to develop to storing strength, and another two weeks is much better. Package bees hived after May 15 build up in time to work on the autumn flowers. If these same packages are given a few frames of brood (sealed) a week or two after hiving, from colonies that can spare the brood, they develop rapidly and may equal the early installed packages. The writer had to purchase 60 pounds of package bees even though colonies wintered very well, in order to make an increase of about 50 new colonies.

Miscellaneous: The new pollen substitutes and supplements will never put the package men out of business. Such feeding may relieve some of the present shortage, but the northern beemen will always need bees in early spring. My own winter loss was 5 per cent from natural causes. Two of these had the symptoms of Nosema but the report from Beltsville Experiment Station was negative. I have not been able to find even a single cell of A. F. B. in my apiaries, so I am looking forward to a pleasant season. (I did not say profitable). Beekeepers should still save every scrap of beeswax. Once the habit is formed of carrying along a container for the burr combs, one will find it a pleasure, which develops with the accumulation of wax, and when added to the cappings and the drone comb that should be replaced, amounts to at least a pound of wax per colony and sometimes more.

Regarding a floor price for honey, I must say that we have been underselling our product too long. If we value our honey at nine or ten cents wholesale how can we expect our customers to place a greater value on it? When the time comes that I must sell my good honey for less than 12 cents per pound, I will use it to feed more bees, and rent their services out for pollination. It is up to the honey packers to maintain good prices for good honey, but to do so they should receive the support of the producers.—R. E. Newell, Holliston, Mass.

ONTARIO, April 7

Weather: The long cold winter that set in early in December and continued without a single thaw into March, came to an end just as suddenly as it started, with the great piles of snow melting and going into the dry, frozen ground so completely that the usual spring freshets in our creeks were entirely absent. Bees flew freely about March 20, and the weather turned unseasonably warm, with soft maple in full bloom during the last week of the month. Temperatures were around 70° for several days and all records were broken at Toronto Observatory for high temperatures in March.

At this date, weather has turned cooler again and for the last two nights we have had frosts. We are at a loss as to know just what to do about unpacking bees as fruit bloom will be out at least three weeks earlier than usual if mild weather continues. Of course, there is danger of frosts doing a lot of damage later on and that is a major cause of alarm in the Niagara fruit belt where buds of peaches, cherries, etc., are just ready to open.

The bees appear to have wintered perfectly, and even without a partial flight for over four months, no signs

of dysentery are noticeable. Some apiaries appear to be 100 per cent just as they looked last fall. But, of course we will be sure to have a number queenless later on. Weak colonies appear to be in a very small minority. The season is very young yet, so it is best not to be too optimistic.

Winter wheat and all clovers have wintered perfectly and with no frost in the ground and growth already well started, not much damage is likely to be caused by "heaving." As to all this talk about stimulating colonies by giving artificial pollen, etc., while this may accomplish results claimed, just now we are not worrying about getting our bees stronger but rather just what to do if they continue to build up naturally, for many colonies appear to be boiling over with bees and brood rearing is as far along as it usually is in May. Yesterday we opened a hive that we have here at home and kept as a sort of barometer to know what the bees in our outyards are doing. Although it was very cool—well below 50—the bees were flying freely carrying water. While we did not make a very long examination, we could see that they had at least six combs of brood in all stages with honey and pollen in abundance. If many colonies are like that on April 6, well, we do not want to try to stimulate them to come along faster for we would not be able to give attention in time to our 30 apiaries.

Miscellaneous: On the evening of April 4th, we saw Prof. Townsend, our Provincial apiarist, at the meeting of York District Association—some 250 present—and he said that winter reports are in general quite good, so it would appear that the season starts out with at least two factors favorable—good wintering of bees and clovers.

It has been definitely decided to start a queen rearing establishment on Pelee Island this season and the results will be watched with interest. The Ontario Government has set the Island apart for this purpose and while I understand that there are no privately owned bees on the Island, this condition will be maintained so that mating can be controlled. As most readers know, Pelee Island is off the southwest tip of Ontario and is out in Lake Erie several miles from the mainland and is the most southern part of Canada. Bee forage is abundant and other factors favorable for queen rearing appear to be present. Many say that there is not another spot on the continent so ideally located as this Island.

Yesterday—April 6th—we received 30 packages of bees—10 days earlier than previous records. Their progress will be watched with interest.—J. L. Byer, Markham, Ontario.

ANTS IN HIVES

By Emer G. Carr

Ants can easily be kept out of bee hives, that is, out of the space between the inner and the outer cover. Ants can be a terrible nuisance and in some parts of the country are very destructive, particularly in the more tropical regions. Beekeepers "cook up" one scheme after another to keep ants out of the space between the two covers of the hive, which seems to be the complaint in most instances.

Since "prevention is better than cure," here is a procedure which will eliminate the trouble unless the colony is in such a depleted condition that there are practically no bees to defend it and is to all intents and purposes, valueless. Simply leave the bee escape hole in the inner cover open, and the bees will keep out the ants. Oh, yes, I know the supply dealers furnish a thin block to put over the bee escape hole. Why? I don't know. Ask them. Fortunately there is no rule that the block must be used.

The writer has not had a bee escape hole covered in twenty years and has yet to see any unfavorable condition develop due to this practice. Simple, isn't it?

Pennington, N. J.

(We have been leaving blocks off holes in the inner cover, during hot summer months. This practice not only gets rid of ants between inner and outer covers but apparently helps bees to expel excess moisture from nectar. We are not absolutely sure about the latter, until we do some further experimental work. Others may have had experience along this line. —Ed.)

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Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 8 cts. per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding.

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FOR SALE—8 tons of fine buckwheat honey in new 60-lb. cans. Julius Seewaldt, Johnsonburg, N. Y.

HONEY FOR SALE—We buy and sell all kinds, any quantity. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York.

FOR SALE—Buckwheat and fall honey in 60-lb. tin cans. Any quantity from can to carload lots. Cloverdale Honey Co-op., Inc., 113 Central Ave., Fredonia, N. Y.

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We cannot guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C. O. D. terms except where the buyer has thoroughly established his credit with the seller.

HONEY & BEESWAX. Highest prices paid. Mail samples. Advise quantity. BRYANT AND COOKINHAM, LOS ANGELES, CALIF.

HIGHEST cash return made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Kentucky.

CASH FOR YOUR HONEY—Extracted or comb. Regular trade, send sample, 60 lb. cans furnished, if desired. W. R. Moomaw, Stone Creek, Ohio.

HONEY WANTED—All grades and Varieties. Highest Cash Prices Paid. Mail Samples. State quantity. HAMILTON & COMPANY, 1360 Produce St., Los Angeles. Cal.

Have you glassed honey, or honey in 60-lb. tin cans either white or light amber, that you have no sale for? If so, write TOWNSEND SALES COMPANY, Northstar, Michigan.

CLOVER HONEY WANTED—Large or small lots. Would like to establish permanent connections with several good producers. Ellsworth A. Meineke, Rt. 1, Arlington Heights, Ills.

HONEY WANTED—300,000 lbs. of honey we packed last year. We need that much for 1945 also. A postcard will bring our truck. If you sell without writing us, we both lose, because we pay top prices. You'll do better with the ALEXANDER COMPANY than with a distant corporation. Send your card today to the ALEXANDER COMPANY, 819 Reynolds, Toledo 7, Ohio.

WE PAY CASH for extracted clover honey. Fairfield Honey Company, Millersport, Ohio.

WANTED—White and amber honey; any amount. D. F. Treap, 317 Keenan Ave., Cuyahoga Falls, Ohio.

FOR SALE

1000 good used cans 10 and 15 cents if I ship 15 and 20. Louis Ginstie, 2 Acacia, Dayton, O.

QUEENBEE PAINTING outfits, $1.00. colony records, 10-15c postpaid. Southwick Apiaries. Waban, Massachusetts.

WRITE FOR LOW CASH PRICE glass jars. Complete stock. Prompt shipment. Roscoe F. Wixson, Dundee, New York.

SEND FOR CATALOG of electric heaters, thermostats, and supplies for heating your hives next winter. D. F. McFarland, Research Engineer, 109 W. Geneva Lane, Oak Ridge, Tenn.

SAVE MONEY by letting us work your wax into wired regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices as we have no agents. Walter T. Kelley Co., Paducah, Kentucky.

WRITE FOR CATALOG Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

SOMETHING NEW — INSTANT NINE FRAME SPACERS Fast, accurate, indispensable. Fat combs; Easy Uncapping; More honey. Set does all supers, $1.50, postpaid. George Leys, 48 Drake Ave., New Rochelle, N. Y.

45 pounds factorymade foundation 5"x 16¾" runs about 15 sheets per pound, and 10 pounds thin super 4¼"x16¾". Sell or trade for packages. Also one Rieschke foundation press, makes foundation up to 10 inches wide. Walter Johnson, Cavalier, No. Dak.

REDUCED PRICES, used 8 and 10 frame equipment, tank, cans, ten-frame bodies, complete, extracting and comb supers, eight-frame extracting supers, covers, bottoms, excluders, metal-covered lids. Numerous other items. Earle Heiges, Shiremanstown, Pa.

25 comb honey supers for 4¼ sections, section holders, plain separators, painted for 8-frame hives, 45c each. 125 comb honey supers, 4x5 plain sections, fence separators. New, nailed up, but not painted. Root goods. $1.50 each. One two-frame small extractor, $10.00. Above part of outfit of soldier overseas. Albert Hann, Glen Gardner, N. J.

HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
C. W. AEPPLER COMPANY
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WANTED--Extracted Honey All Varieties
One can or a carload—what have you? Mail your offerings and samples to us. Prompt action—Cash on delivery.
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Made from war developed plastic, full Flexiglass face, clear vision, good ventilation, weight 1½ oz. Folds for the pocket. Worn with or without hat. Developed and tested in our own apiary, $1.25 postpaid.
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We are distributors of Staley's Lo-Fat, High Protein expeller processed soyflour for beekeepers. The flour and materials for our pollen traps are of the highest quality.
KILLION & SONS APIARIES
Paris, Illinois

We are Still Booking Italian Bees and Queens. Prices are as follows:
2-lb. pkg. with queen $3.75
3-lb. pkg. with queen 4.75
4-lb. pkg. with queen 5.75
20% down books order, balance 10 days before shipment.
DIXIE BEE FARM
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Package Bees With Queens
We can accept a few more orders for May delivery.
Good overweight and safe arrival guaranteed.
2-lb. with queen, $4.00; 3-lb., $5.00
10% deposit books your order.
Prices quoted on quantity lots.
CANEY VALLEY APIARIES
Bay City, Texas

FOR SALE—Root ten-frame metal cover bee hives, no frames, guaranteed no disease, $2.50 each. Irvin Van Devier, Medina, Ohio.

FEB. 18th, 1941, I sold R. J. Knutson, Ladysmith, Wis., the first pollen trap ever sold. I have been making them ever since. You can't buy a better trap at any price. Approved by Dr. Farrar. $2.50 postpaid with instructions for using and feeding. Geo. DeKoeyer, Baraboo, Wis. "Made to Stay Made" metal boxes since 1914.

FOR SALE, all ten-frame equipment. 1000 bodies, 325 metal telescope covers, 75 roofing paper covers, 100 plain wooden covers, 500 bottoms, 3000 frames, combs cut out. All material standard size. Homemade of white pine or cyprus. Machine cut. Bodies lock-cornered. Not dovetailed. Owner out of bees for duration. Bernard Utz, R R. 5, Dayton, Ohio.

A new Combined CONTROLABLE FEEDER AND SWARM CONTROL. Useful also as inner cover, bee escape and robbing preventive board in queenlessness and drying wet combs; as winter top entrance and pollen feeder. Sample with directions postpaid, $1.95. 5 (not assembled nor prepaid) for $8.00. NICOLLET COUNTY NURSERY, St. Peter, Minn.

BEES AND QUEENS FOR SALE

GLEANINGS cannot guarantee that all bees advertised for sale in our classified columns are free from bee disease. We use all possible care in accepting advertisements but we cannot be held responsible in case disease appears among bees sold. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

FOR SALE—Italian queens. Graydon Bros., Greenville, Ala., Rt. 2.

GOOD ITALIAN QUEENS, carefully raised, $1.00 each. D. W. Howell, Shellman, Georgia.

PACKAGED BEES—Young, thrifty Italians. Health Certificate furnished. Tanner Bee Company, Laurel, Mississippi.

CAUCASIAN BEES — 2-lb. pkg., $4.10; 3-lb. pkg. $5.10. Booking orders now. Lewis & Tillery Bee Co., Greenville, Ala.

GOLDEN ITALIAN queens, any number. $1.25 each. Carolina Bee Farm. W. O. Curtis, Mgr., Graham, North Carolina.

FOR SALE—My entire bee business, on account of failing health. Certificate of inspection will be furnished at time of sale. J. J. Wilder, Waycross, Ga.

ASSURE maximum crop with our gentle hardy Italian queens, $1.25 each, any quantity. Golden Girl Apiaries, P. O. Box 1468, Mobile 8, Alabama.

ITALIAN QUEENS for May and June delivery, bred from high producing stock. None better. $1.00 each. W. A. Fletcher, Garland, Texas.

IMPROVED ITALIAN QUEENS. $1.00 from a strain that produced over 600 lbs. of honey per colony. Henry Loehr, Jr., Caldwell, Texas.

I HOPE to be able to handle some small orders of three-banded Italian queens, beginning May 10. Price, $1.25 each. A. M. Peach, Baldwyn, Mississippi.

FOR SALE—200 eight-frame hives of bees, 2 supers each, guaranteed no disease. Caucasian stock. Spring delivery. Nealey Honey Co., Aberdeen, Idaho.

PACKAGE BEES, QUEENS — Italian Circular free. Crenshaw County Apiaries, Rutledge, Alabama.

SELECT ITALIAN QUEENS—If you are particular about queens, I ship the kind of queens you want. "No fooling." $1.25 each. J. H. McCartney, Piru, Calif.

ITALIAN QUEENS—Bred from the best honey storers, which are all right in other respects. Untested queens, from May 20th to June 15th, $1.50 each. White Pine Bee Farms, L. B. 80, Rockton, Pa.

PACKAGE BEES with young laying Caucasian queens, 2-lb. package, $3.80; 3-lb., $4.80. See us for queens after May 31, $1.00 each. Formerly Miller Bros., now write Miller and Evans, Three Rivers, R. 1, Tex.

NORTHERN QUEENS from prolific Italian breeding stock selected for honey production and gentleness. Available around June 1. Untested $1.00 any number. Booking orders now. Barger Apiaries, Carey, Ohio.

THREE-BANDED ITALIAN QUEENS—fine honey producers, and easy to work with, 1-25, $1.25; 25-50, $1.20; 50-up, $1.15. Health Certificate with every order. Alamance Bee Company, George E. Curtis. Mgr., Graham, North Carolina.

GREEN'S profit-producing queens will please you as they have pleased hundreds of others. Famous the country over. Where could you do better? Price, $1.00 each. Booked up on package orders. D. P. Green, Deland, Fla., Rt. 2.

EARLY PACKAGE BEES.—Prompt shipment begins May 1. 2-lb. packages and queen, $5.00 postpaid; 3-lb. package and queen, $6.50 postpaid. Choice Italian queens, $1.25. Safe arrival guaranteed. Birdie M. Hartle, Reynoldsville, Pa.

FOR SALE—Complete equipment for 50 colonies package bees. Includes 50 of each—covers, inner covers, bottoms, excluders, division board feeders. 200 10-frame standard hive bodies with drawn comb, also 200 combs honey and pollen for spring feed. Buyer will have access to bee yard located on M 53 in Lapeer County. No disease. A. Tennenhouse, 12243 12th St., Detroit, Mich.

FOR SALE OR LEASE, the entire holding of Hyland Apiaries, Sylvester, Ga., and West Elkton, Ohio, consisting of 6000 hives of bees, equipment for honey production and package bees. Certificate of inspection furnished at time of sale. Factory buildings, wood working plant, foundation and wax refining plant. Boats, barge, land trucks, etc. Annual turnover, $100,000.00. Alan Eby, Owner, Sylvester, Ga.

SEEDS

BY EXPRESS COLLECT American Basswood trees. 4-5 ft. at $1.00; 5-6 ft., $1.50; 6-8 ft., $2.00; 3-4 ft. seedlings, 40c; for Cordata Basswood (earlier bloom) add 25c each; French Pussy Willow, 4-5 ft. (pollen producer), 75c; 3-4 ft., 40c; Red Dogwood shrub, 4-5 ft. at $20.00 per 50; Pink Tartarian or Morowii Honeysuckle, 4-5 ft. shrubs, 18-24 inch, $8.50 per 50; 2-3 ft. $11.00 per 50; 4-5 ft., $22.00 per 50.

BY MAIL PREPAID, 5 American Basswood Seedlings, 12-18 inch or 4 18-24 inch for $1.00; 2 3-4 ft. at $1.00; 2 Cordata Basswood, 3-4 ft. at $1.25; 2 4-5 ft., $2.00; 4 Pink Tartarian or 5 Morowii Honeysuckle shrubs, 18-24 inch for $1.00; 2 French Pussy Willow (pollen producer), 3-4 ft. for $1.00; 3 Red Dogwood, 18-24 inch, $1.00;

NORMAN'S

Bright Italian Bees and Queens

For 23 years we have been breeding the Italian stock. We guarantee pure mating of Queens, safe arrival on Queens and package bees. Health certificate furnished

All package bees F. O. B. Express

2-lb. package bees with Queen	$4.00
3-lb. package bees with Queen	5.00
4-lb. package bees with Queen	6.25
Young laying Queens (each)	1.25

NORMAN BEE CO.
Ramer, Ala.

CARNIOLANS

CAUCASIANS

No more package bees this spring. Package business will take all queens reared during May. Untested queens, both races, June 1st on, $1.00 each; by Air Mail 7c extra.

Albert G. Hann, Glen Gardner, N. J.

NOTICE

No more orders accepted for Queens and Bees until so advised in the columns of Gleanings. Thanks!

Bolling Bee Co., Bolling, La.

ITALIAN PACKAGE BEES AND QUEENS

We are now booking orders for 1945. Place your orders early for preferred shipping date.

F. E. MORRISON
Box 320 Butte City, Calif.

ITALIAN PACKAGE BEES AND QUEENS

Queens, $1.25 each
2-lb. pkgs. with queens, $4.00
3-lb. pkgs. with queens, $5.00

For less than a 25 package order of bees, add 25 cents per package to the above price. 4% extra queens with each shipment.

JOHN S. SHACKELFORD
Live Oak, California

Italian Bees & Queens

WE HAVE NEVER HAD ANY DISEASE

OUR BEES GET HONEY

Prices for May

	Queens	2-lb. Pkgs.	3-lb. Pkgs.
1-24	$1.25	$4.00	$5.10
25-99	1.15	3.75	4.80
100-up	1.05	3.50	4.50

For queenless packages, deduct price of queen

BAKER AND RUNNING APIARIES

C. W. Baker, Manager
Sumterville, Alabama

PACKAGE BEES

for Spring Delivery

with Three Banded Italian Queens of highest quality! WRITE NOW for prices and open shipping dates.

• • •

JOHN C. HOGG

Tifton, Ga., U. S. A.

ITALIAN BEES AND QUEENS FOR 1945

We still have a few good dates open. Order direct from this ad.

2-lb. package with queen, $4.00
3-lb. package with queen, $5.00
Queens $1.25

5% discount on 50 packages or more. Our bees are gentle and good honey gatherers. 25% will book your order..

WALKER APIARIES
Pharr, Texas

ITALIAN BEES AND QUEENS

We are booking orders for Spring, 1945. Only 20% with order, balance ten (10) days before shipping date. Prices as follows:

2-lb. package with queens, $3.50
3-lb. package with queens, 4.50
4-lb. package with queens, 5.50

THE STAR BEE FARM

Hessmer, La.

3-BANDED ITALIAN BEES

2-lb. pkg. with queen $4.00
3-lb. pkg. with queen 5.00
Queens 1.25

WRITE FOR DISCOUNT

J. P. CORONA,
Box 124, Kenner, La.

10 Siberian Pea Tree seedlings, 18-24 inch for $1.00. Personal checks require 10c (Our best nectar and pollen producing shrubs and trees). Can ship in March for South. A local Lewis-Dadant dealer. NICOLLET COUNTY NURSERY, St. Peter, Minn.

HELP WANTED

WANTED—Experienced bee man or willing worker who is willing to learn the business. Year around work in our Michigan apiaries. Good wages. The Hubbard Apiaries, Onsted, Michigan.

HELPER to work in my Kansas apiaries. Can start immediately, some experience preferable. Also someone to run a small town cafe. Irvin Klaassen, Whitewater, Kansas.

WANTED

WANTED—Saxophones or band instruments. W. S. Frazeur, 505 N. Foster Ave., Lansing, Michigan.

WANTED TO BUY—Colonies of bees. State price. Thomas McDermott, 123 No. 11th Street, Newark 7, N. J.

SUPPLIES

SAVE ON LEWIS-DADANT BEE SUPPLIES AND HONEY CONTAINERS IN MINNEAPOLIS. Send list of needed supplies for quotation. Prompt shipment made from large stock. Top prices paid for honey and beeswax in cash or trade. HONEY SALES COMPANY, 1806-08 No. Washington Ave., MINNEAPOLIS 11, MINNESOTA.

EXTRACTORS FOR SALE

FOR SALE—Eight-frame reversible Root extractor, $ 40.00. Clarence Deeter, R. 3, Greenville, Ohio.

FOR SALE—A 2-frame reversible extractor, with brake, just like new. Used 2 weeks. Clarence Pfluger, 127 So. Ont. St., DePere, Wisc.

FOR SALE—One 20-frame Simplicity extractor in good condition, $70.00, complete with drying sheets. C. W. Schrader, Waterville, N. Y.

FOR SALE—45-frame Root Simplicity power honey extractor, No. 4545, good condition; also used bee supplies. Mrs. A. L. Crumpacker, Mora, Minn.

ROOT 4-frame reversible power extractor, 12 inch baskets; also 90-gallon Root tank. Reasonable prices. Raymond F. Fuller, New Carlisle, Ohio.

TANNING

TAN your deerskins, sheepskins, etc., Indian style. Details free. Wickizer, 564-B Hooper Road, Johnson City, N. Y.

MAGAZINES

MANY BEEKEEPERS have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy. Canada's oldest fur farming magazine tells how. Fur Trade Journal of Canada, Box 31, Toronto 2, Ontario.

WESTERN CANADA BEEKEEPER, official organ of the Manitoba Beekeepers' Association. One year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $1.75. Wallingford Building, Winnipeg, Canada.

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly, 7s, 6d., International Money Order. Apply Editor, Indian Bee Journal, Jeolikote, Dist. Nainital, U. P. India.

READ the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, P. O. Box 43, Cleveland, Johannesburg, South Africa.

THE BEE WORLD—The leading Journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free. 12 cents stamps. Membership in the Club including a subscription to the paper, 10/6. The Apis Club, L. Illingsworth. The Way's End, Foxston, Royston, Herts, England.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription, $1.50. Hotel Cactus, San Angelo, Texas.

1945 PRICES

ITALIAN BEES AND QUEENS

2-lb. package with queen, $3.75
3-lb. package with queen, 4.75
4-lb. package with queen, $5.75

Prompt shipment and safe delivery guaranteed. 20% deposit on booking orders.

Order early and play safe.

CLOVER BEE FARM, Hessmer, La.

York's

Package Bees and Queens

Quality Bred Italians

Booking orders now for late May and June shipping. Ample young laying queens available during late May and throughout the summer.

2-lb pkgs., bees with queens $4.25 each
3-lb. pkgs., bees with queens 5.25 each
Young laying queens 1.30 each
Queenless pkgs. deduct $1.10 per pkg.

York Bee Co.

Jesup, Georgia, U. S. A.

(The Universal Apiaries)

Sunny South Apiaries

Bunkie, La., I. Clark, Prop.

5000 PACKAGES OF BEES — ITALIANS

10,000 Queens—Available for April and May shipments.

Buy WAR BONDS and HOLD THEM

2-lbs. with queen $4.00
3-lbs. with queen 5.00
Extra queens 1.25

PACKAGE BEES WITH CARNIOLAN QUEENS

2-lb. packages with queen, $4.00 each, f. o. b.
3-lb. packages with queen, $5.00 each, f. o. b.

EPHARDT'S HONEY FARMS, PLAUCHEVILLE, LOUISIANA

QUEENS 3 KINDS

$1.25 each **Send for FREE circular**

ITALIANS
Caucasians bred to Italian drones
Daughters of Queens bred for Resistance
2-lb. pkg. bees with queen, $4.00 **3-lb. pkg. bees with queen ,$5.00**
Over 25 years a shipper in U.S.A. and Canada

BLUE BONNET APIARIES, Route 1, Box 70, Mercedes, Texas

ITALIAN QUEENS

Northern bred, for business, safe arrival. 48 years breeding experience.

Booking orders for June delivery
Untested, $1.00; 6, $5.50; 12, $11.00
Selected, $1.25 each

I. F. MILLER, Warren, R. 3, Pa.

1945 PRICES
ITALIAN PACKAGE BEES WITH QUEEN
2 pounds and queen, $3.75 each
3 pounds and queen, $4.75 each
4 pounds and queen, $5.75 each
QUEENLESS PACKAGES
2 lbs., $2.85; 3 lbs., $3.85; 4 lbs., $4.85
20% down books order. Health certificate and safe delivery guaranteed.
HESSMER BEE FARM, Hessmer, La.

CHOICE ITALIAN QUEENS
and Package Bees
Thanks a Million, Folks!
We cannot accept any more orders for package bees and queens for this season.
CLIFTON APIARIES
P. O. Box 684 Oroville, Calif.

LEATHER COLORED ITALIAN QUEENS
MIDDLE TENNESSEE APIARIES
1 to 25, $1.25; 26 on up, $1.10
From Imported Strains.
¼ books orders. Balance before shipping. Add 5 cents for all queens by air.
J. B. TATE & SON
1029 No. 4th St., Tel. No. 34509M
Nashville 7, Tenn.

I Am Still Open for Orders of Italian Package Bees and Queens

at the following prices:

	1-24	25-49	50 up
2-lb. pkg.	$4.00	$3.85	$3.75
3-lb. pkg.	$4.85	$4.65	$4.50

20% to book order in advance
Full weight, live delivery, prompt service guaranteed

Oscar Arnouville

Hamburg, Louisiana

Italian Package Bees and Queens

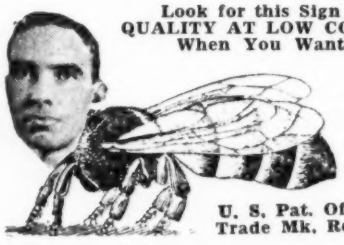
2-lb. pkg. with queen $3.50
3-lb. pkg. with queen $4.50
Queens, any quantity $1.00
"We strive to please"

XX XX XX

Port Gibson Apiaries

Port Gibson, Miss.

When Writing to Advertisers Mention Gleanings



Look for this Sign
QUALITY AT LOW COST
When You Want

U. S. Pat. Off. Trade Mk. Reg.

KELLEY — "The Bee Man"

Glass - Tin

16 oz. Economy Jars, carton 24 each,	$ .70
32 oz. Economy Jars, carton 12 each,	.42
5 lb. Economy Jars, 12 cartons,	5.00
24 cartons,	9.95
60-lb. Square tin cans, carton of 16,	5.40

Quick shipment from large Paducah stock

THE WALTER T. KELLEY CO.

Paducah, Kentucky

Buy U. S. War Bonds and Stamps

80 YEARS AMONG THE BEES

(Continued from page 203)

derstand how such a hive would render unnecessary the use of a bee smoker, a hive tool, or even a bee veil, but today I would have a bee smoker lighted and handy, to save time.) Then why didn't such a hive become universal? I'll explain that in the next issue.

The Halved Mitred Corner Joint of a Simplicity Bee Hive

You will notice in Fig. 3 that A. I. Root adopted first the halved corner joint, a piece being cut out and then nailed at the corner, and then he later added the mitred joint, making a combination of the two. His idea was to avoid leaving the ends of the grain exposed to the weather which he thought would rot out quicker. That he was wrong in this is shown by the locked corner or dovetailed hive joint, the ends of the grain lasting as long as the sides. Mechanically, it was impossible to make the hive parts as here shown, fit exactly like the other. He had nothing but the mitred joint to hold the corners together and that was not enough to make a strong corner.

Jensen's

Package Bees and Queens for latter May and early June.

Conditions having been favorable for queen-rearing and bee production earlier than usual, we find ourselves so situated that we will be able to accept additional orders for both packages and queens.

Prices:	Queens	2-lb. pkgs with queen	3-lb. pkgs. with queen
1-24	$1.25	$4.00	$5.10
25-99	1.15	3.75	4.85
100-up	1.05	3.50	4.50

Booster Packages (Queenless) deduct price of queens.

JENSEN'S APIARIES

Macon, Mississippi

Home of "Magnolia State" Strain Italians

LAST HALF MAY

We are booked to capacity through May 25th. If you can accept shipments after that date, we will ship first date available.

PRICES:

	1-2	3-24	27-99	Above
2-lb. pkg. with queen	$3.90	$3.65	$3.50	$3.35
3-lb. pkg. with queen	4.90	4.65	4.50	4.35
4-lb. pkg. with queen	5.90	5.65	5.50	5.35

For queenless packages, deduct $1.00

For Spl. Loose-Queen Pkgs., add $1.00

Untested Italian Queens $1.00, Tested $2.00

All orders should be accompanied with $1.00 per package deposit to confirm and hold shipping assignments. Balance due before shipping date.

THE PUETT COMPANY

Hahira, Ga.

KNIGHT'S
Package Bees and Queens

Leather colored Italians
The best honey gatherers
UNABLE TO SUPPLY UNTIL MAY 20TH.
Prices including queens

	2-lbs.	3-lbs.	4-lbs.	5-lbs.
1-24	$3.85	$4.95	$6.05	$7.15
25-99	3.60	4.65	5.70	6.75
100	3.35	4.35	5.35	6.35

Extra queens, $1.00. 100, 90c each.

Jasper Knight
Hayneville, Ala.

DIXIELAND'S

Leather-Colored Italians, Package Bees and Queens for May and June delivery. Send your order in now.

	Queens	2-lb. pkg.	3-lb. pkg.	4-lb. pkg.
1-24	$1.25	$4.00	$5.10	$6.20
25-99	1.15	3.75	4.80	5.85
100-up	1.05	3.50	4.50	5.50

Prices after June 1st

	Queens	2-lb. pkg.	3-lb. pkg.	4-lb. pkg.
1-24	$1.10	$3.85	$4.95	$6.05
25-99	1.00	3.60	4.65	5.70
100-up	.90	3.35	4.35	5.35

XX XX XX

Dixieland Apiaries
Greenville, Alabama

Leather Colored Italians

Package Bees and Queens for May and June delivery. All orders large or small will be given my personal attention.

Quan.	Queens	2-lb.	3-lb.	4-lb.
1-24	$1.25	$4.00	$5.10	$6.20
25-99	1.15	3.75	4.80	5.85
100-up	1.05	3.50	4.50	5.50

Prompt delivery, safe arrival and satisfaction guaranteed.

G. E. Whittle
Star Route, West
Greenville, Alabama

ITALIAN QUEENS

From May 15 throughout the season will have plenty of queens. These are select three band Italians. Quit petting those old ones and re-queen with a young 1945 queen from our yards.

Quantity	Prices	After May 20
1-24	$1.25	$1.10
25-99	1.15	1.00
100 up	1.05	.90

EUGENE D. CUTTS
Citronelle, Alabama

PLEASE HELP US SERVE MORE PRODUCERS BETTER—
by extending your period of requeening with daughters of stock bred for resistance to AFB. Write for shipping dates.
IOWA STATE BEEKEEPERS' ASSOCIATION
State House **Des Moines, 19, Iowa**

BUY U. S. WAR BONDS AND STAMPS

Look for this Sign
QUALITY AT LOW COST
When You Want

U. S. Pat. Off.
Trade Mk. Reg.

KELLEY — "The Bee Man"

QUEENS

QUICK SHIPMENT
FROM PADUCAH

1 to 25, $1.25 each; 26 to 99, $1.15 each;
100 and over, $1.05 each

PACKAGE BEES
After May 20th

	1-2	3-24	27-99	Above
2-lb. pkg. with queen	$3.90	$3.65	$3.50	$3.35
3-lb pkg. with queen	4.90	4.65	4.50	4.35

THE WALTER T. KELLEY CO.
Paducah, Kentucky

PACKAGE BEES AND QUEENS!

Line Bred St. Romain's "Honey Girl" Italians

PACKAGE PRICES TO END OF SEASON

	1 to 5	6 to 25	25-up	
2-lb. pkg.	$4.00	$3.90	$3.75	QUEEN PRICE TO
3-lb. pkg.	4.85	4.65	4.50	JUNE 10TH
4-lb. pkg.	5.85	5.65	5.50	$1.25 EACH
5-lb. pkg.	6.80	6.60	6.45	

Terms: Cash with order. State Inspection certificate with each order.

ST. ROMAIN'S "HONEY GIRL" APIARIES
Moreauville, Louisiana

PACKAGE BEES - ITALIAN - QUEENS

Package bees will be available in light volume during the first half of May and in moderate volume during the last half. Try us for queens during the entire month and be sure to have your summer and fall queen orders booked early

Quantity	Queens	2-lb. pkgs.	3-lb. pkgs.
1-24	$1.25	$4.00	$5.00
25-99	1.15	3.75	4.80
100-up	1.00	3.50	4.50

BESSONET BEE COMPANY
Donaldsonville, La.

THREE BAND ITALIANS

	1-24	25-99	100 up
2 lbs. bees with queen	$4.00	$3.75	$3.50
3 lbs. bees with queen	5.00	4.75	4.50
Extra queens each	1.25		

For queenless packages deduct the price of queen.
20% deposit to hold shipping date. Balance two weeks before shipping.

W. E. PLANT
Hattiesburg, Rt. 2, Mississippi

GASPARD'S QUALITY ITALIAN QUEENS AND PACKAGE BEES

We are now booking orders for Spring, 1945.
Only 20 per cent with order, balance at shipping time.

PRICES AS FOLLOWS:

2-lb. package with queens $3.75
3-lb. package with queens $4.75
4-lb. package with queens $5.75
Comb packages with one frame of brood add $1.50 per package

J. L. GASPARD
HESSMER, LOUISIANA

PACKAGE BEES AND QUEENS

PROGENY-TEST 3-BANDED ITALIAN STRAIN. Also MRAZ'S and other RELIABLE BREEDERS STRAINS of High Quality Daughters of Stock Bred for Resistance.

We can accept orders from May 10th and later for package bees with queens. Also loose queens.

We will be able to supply queens on short notice beginning end of May or early June, however, for earliest dates we advise booking far in advance.

HEALTH CERTIFICATE ACCOMPANIES EACH SHIPMENT

Effective May 20th deduct 5c per queen.

	2-lb. Pkg. With Queen	3-Lb. Pkg. With Queen	Queens
1-9	$3.70	$4.70	$1.10
10-24	3.60	4.60	1.05
25-99	3.55	4.55	1.00
100 and up	3.45	4.45	.95

QUALITY AND SERVICE

GARON BEE COMPANY

Telegrams, Western Union **Telephone 8614**

DONALDSONVILLE, LA.

Yes—We Put the Quality in

QUEENS

THREE BAND ITALIANS

2-lbs., $4.00; 3-lbs., $5.10

each additional pound, $1.10.

Book your order early with

THE ANDERSON BEE COMPANY
OPP, ALABAMA

PURE THREE-BANDED ITALIAN QUEENS

The John M. Davis Strain

Having bred queens for Mr. John M. Davis for years and by careful and select breeding, have maintained the same fine strain of bees. Having selected and tested breeders for the past few years from the best honey gatherers and most prolific queens, I can offer the same quality queens.

PRICES FOR MAY

1-24 $1.25 each untested.
25-99 $1.15 each untested.
Guaranteed purely mated
After June 1st, any amount $1.00 each.
Cash with orders.

LITTLE'S APIARIES
Shelbyville, Tenn. **P. O. Box 122**

Three Banded Italian Bees and Queens

PRICES UNTIL MAY 20th

Quantity	Queens	2 lbs. W/Q	3 lbs. W/Q	4 lbs. W/Q
1-24	$1.25	$4.00	$5.10	$6.20
25-99	1.15	3.75	4.80	5.85
100-up	1.05	3.50	4.50	5.50

For queenless packages, subtract price of queen.

We ship only overweight packages of young bees, and young queens guaranteed to be purely mated.

Direct all mail to us at LEROY, ALA., and telegrams to us at JACKSON, ALA.

Holder Apiaries, Leroy, Alabama

FEED AND SUCCEED

(Continued from page 197)

in various sections of the United States. After the first few years of beekeeping, he says, he never tried to determine the amount of honey the bees would need to see them through the winter. He simply "stuffed" them with sugar syrup as long as they would take it down. Then in the spring he usually had to feed them again. The old timer stressed the fact that even with the most energetic type of forced feeding, there are times when some colonies run short. From experience, the writer can attest to this. When brood rearing is extremely heavy, the speed with which a colony can go through their stores is amazing.

The practice of leaving plenty of honey in the hives in the fall is, of course, good beekeeping. But too often there are empty patches of cells that need to be filled.

Los Angeles, Calif.

[Mr. Tontz has emphasized a very important and timely warning. It is too true that sometimes colonies will be on the point of starvation and actually starve just before a major honey flow. The bees are lost and so is the honey crop.—Ed.]

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the
"AUSTRALASIAN BEEKEEPER"
Subscription 5 shillings per year. Start any time. Inquire for International Money Order for 5 shillings (Australian) at your Post Office.
Write now to the editor, P. O. Box 20 West Maitland New South Wales Australia

Bees & Queens. We urge early (cash with) orders for priority on all supplies. CREDIT for Beeswax. Write for price lists.

AMERICAN BEE JOURNAL
Hamilton, Illinois
Oldest bee journal in the English language. Keep up on markets, practices, scientific data, regulations, plant possibilities.
Two years, $1.50—Order today!

PACKAGE BEES AND QUEENS — CAUCASIANS OR ITALIANS
2-lb. Package and Queen ..... $4.00 each
3-lb. Package and Queen ..... 5.00 each
Over a quarter of a century in the same place, in the same business, is my record. My motto: "I will expect to do business with you again."
H. E. GRAHAM, CAMERON, Texas

the Hubbard APIARIES
WRITE FOR FREE CATALOG
Quality Bee Supplies. Factory Prices
Prompt Shipment from Stock
Satisfaction Guaranteed
THE HUBBARD APIARIES
Manufacturers of Bee Supplies
ONSTED, MICHIGAN

FIFTY YEARS WITH THE BEES

Because of the very early Spring we find that we can handle additional orders after May 15th and some even after May 1st.

Prices after May 15th

	1-6	7-24	25-100	100-up
2-lb. pkg. with queen	$3.90 ea.;	$3.75 ea.;	$3.60 ea.;	$3.50 ea.
3-lb. pkg. with queen	4.90 ea.;	4.75 ea.;	4.60 ea.;	4.50 ea.
4-lb. pkg. with queen	5.90 ea.;	5.75 ea.;	5.60 ea.	5.50 ea.

Individual queens $1.00 each any number

Additional bees add $1.00 per pound, if more than four pounds are wanted. Wings of queens clipped free of charge on request. Safe arrival of both packages and queens guaranteed.

M. C. BERRY & SON

Box 684 Montgomery, Ala.

BETTER-BRED QUEENS---Three-Banded Italians

It is not what we say in this ad that counts. It is the service and quality we give you that counts.

	Queens	2-lb.	3-lb.	4-lb.	5-lb.
1 to 24	1.25	4.00	5.10	6.20	7.30
25 to 99	1.15	3.75	4.80	5.85	6.90

Calvert Apiaries, Calvert, Alabama

LOWER PRICES AFTER JUNE 1st

Bright 3-Banded Italians

Yes, We Have Them

Place your order with us now, we are not the biggest shippers of package bees and queens, but we rank with the best in quality and service. Safe arrival, satisfaction guaranteed. Health certificate furnished. In U.S.A. and Canada.

PRICES TO JUNE 1st

	1-49	50-100
2-lb. pkg. with queen,	$4.00	$3.85
3-lb. pkg. with queen,	5.00	4.85
Untested queens,	1.25	1.15

PRICES AFTER JUNE 1st

2-lb. pkg. with queen,	$3.75	$3.50
3-lb. pkg. with queen,	4.75	4.50
Untested queens,	1.00	0.90

All tested queens double the price of untested queens.

Packages bees, F.O.B. Express, if by parcel post add postage.

Norman Bros. Apiaries, Ramer, Alabama

-MAY-

WE NOW CAN ACCEPT MORE ORDERS, ON BOTH QUEENS AND PACKAGES

OUR LOCATION ASSISTS US IN REARING QUEENS, THAT WE CAN RECOMMEND TO BE OF THE HIGHEST QUALITY. THEY ARE GIVING SATISFACTION WITH PRAISE.

2-lb. pkg. bees with queen, $4.00
3-lb. pkg. bees with queen, 5.00
Queens 1.20

R. L. Bernell

Rt. 6, Box 270, New Orleans 17, Louisiana

COMPARATIVE BEEKEEPING AS A HOBBY

(Continued from page 189)

would try to obtain some of these old American blacks. After writing a number of letters I found a man in Florida who had some and was willing to trade a black queen for a young laying Caucasian queen. It was quite late in the season when the exchange took place so that when my black queen arrived she was dead.

The beekeeper from whom I received this black queen told me that he had better returns from them than from his Italians. This agreed more or less with what I had read. It was my desire to put this black into a hive among my hives of Caucasians and Carniolans and watch developments. Upon examination of the bees that came with the black queen I found them considerably smaller than those blacks I had observed here on the Island, and also the color of the Florida black bee was of a brownish cast, while those I saw here on Long Island were shiny jet black and very much larger than those from Florida. I suppose there is only one thing to do to satisfy my curiosity and that is to trail them and hive the swarm if I can find their hideout.

Brooklyn, N. Y.

[We know of no redeeming feature of American Black bees except that a light shake will remove every bee from the extracting combs. In all other respects they are inferior to the other races mentioned. Moreover, they are an easy prey to European foulbrood. Better keep away from them.—Ed.]

NORMAN'S
Package Bees and Queens

Now Ready

Quality - Service - Experience

Pure Italian Bees and Queens. Nothing but the best bright 3-Band Italians. Prompt service, full weight packages, young laying queens, safe arrival and satisfaction guaranteed.

State Health Certificate Furnished

Unt. Queens	$1.00
Tested Queens	2.00
2-lb. pkg. with Queen	4.00
3-lb. pkg. with Queen	5.00

All pkgs. F. O. B. Express.

JOHN A. NORMAN

Route 2 **Ramer, Ala.**

We Doed It Again
WHAT?

S O L D all the package bees we can book for shipment before May 15. If the weather and colony conditions are favorable we may be able to supply a small number of packages with queens and queenless bees for April. However, this will take time to tell.

We have made an effort to accept and book all orders of our old customers and as many new ones as we could reasonably expect to ship on time.

To those to whom we had to return orders, please accept our regrets. To the others, we thank you.

Rossman & Long

Box 133 **Moultrie, Ga.**

Thrifty Three-Banded Italians
Packages Bees and Queens

They are not too dark and not too light, but they are the kind that suit most people just right. If you want your order filled right just give me a trial. Full weight and safe arrival guaranteed.

PRICES:

Queens	$1.10
2-lb. pkgs. with queens	3.50
3-lb. pkgs. with queens	4.50
4-lb. pkgs. with queens	5.50

FARRIS HOMAN

Shannon, Mississippi

GREETINGS

We are practically booked to capacity on Package Bees for 1945. If weather conditions are favorable we may be able to handle a few more orders.

We should be able to handle promptly any Queen Orders after June 1st.

You may be sure that we will do all we can to get out every Package and Queen possible, consistent with Quality.

— PRICES —

ITALIANS		Through May 20th			CAUCASIANS
Lots of:	Queens	2-lb.	3-lb.	4-lb.	5-lb.
1-24	$1.25	$4.00	$5.10	$6.20	$7.30
25-99	1.15	3.75	4.80	5.85	6.90
100 up	1.05	3.50	4.50	5.50	6.50

For Queenless Package Deduct Price of Queen.

The Stover Apiaries

MAYHEW, MISS.

ROOT QUALITY BEE SUPPLIES

For Michigan

ROOT QUALITY BEE SUPPLIES

For Satisfaction Buy The Best

There are not enough supplies available to fill all orders promptly. We endeavor to consider the "OTHER FELLOW" when filling orders in these war times, and hope to please everyone.

FOR GREATEST PROFITS IN 1945

Produce Section or Cut-Comb Honey. We have everything for the Comb Honey Producer and a complete line of packages for Cut-Comb Honey.

We have a good stock of glass and tin HONEY CONTAINERS including plenty of 5 and 10 pound tin honey pails.

Your BEESWAX is needed to insure our supply of Comb Foundation and to fill our orders for Army Ordnance. Ceiling prices and freight paid on lots of 100 lbs. or more of rendered wax.

WRITE FOR PRICES

M. J. BECK COMPANY

Successor to M. H. Hunt & Son

510 N. Cedar St. **Box 7, Lansing 1, Michigan**

This photo shows portion of one of our queen yards containing over 6000 nuclei

ITALIAN PACKAGE BEES AND QUEENS

2 lbs. with queen $4.00
3 lbs. with queen 5.00
Extra queens, each 1.25

Several thousand extra queens available. Write for prices on large orders.

OVERBEY APIARIES, BUNKIE, LA.

DOES REVERSING PREVENT SWARMING

(Continued from page 188)

the hive body above the excluder (if there be one there at the time) I can not scientifically state. My personal observation is that reversing, if timed to precede the building of queen cells, does greatly discourage swarming.

I believe if more of us beekeepers were perfectly honest with our bees and would take their cell building activity as an evidence on their part of the genuine need for a new queen, rather than primarily as a desire to swarm out, we would handle them more wisely. As I said above, this supersedure may terminate in swarming, but swarming may not have been the original objective of the bees. Accordingly, we should take little satisfaction in thwarting them in doing what they may need very much to do.

The working force and the brood of a colony do not need to be regarded as usable only in that particular colony. Where a colony has cells built and truly means to raise a new queen, the operator can let the queen raising go on, but safeguard himself against losing the major portion of the working force of the colony by transferring a goodly portion of its strength to other colonies. In substance, he may regard the yard of bees, rather than any one colony, as the producing unit.

Saugerties, New York.

When writing to Advertisers mention Gleanings

FEEDING A DRY POLLEN SUBSTITUTE

(Continued from page 193)

the dry pollen vigorously until the natural pollen flow started and then most yards of bees deserted the artificial source.

For best results with the dry pollen substitute it should be supplied colonies at least two weeks before the early spring pollen appears and then if the natural pollen flow is curtailed because of weather be sure to supply dry pollen substitute abundantly until the fruit-dandelion flows occur.

Dry Pollen Feeders Prevent Complaints from Farmers

The use of dry feeders will pay for themselves many times in avoiding complaints from farmers that bees are bothering their granaries or grain feeding racks for stock. In many locations before natural pollen becomes available bees cause such a disturbance in gathering exposed grain around farm buildings that quite a good deal of ill-will is developed in the community toward bees. Every beekeeper should take every measure to overcome this condition. We have been using these dry feeders for several years and find that they solve this problem quite satisfactorily.

Columbus, Ohio

MICHIGAN CLOVER HONEY

THE 1945 CROP OF MICHIGAN HONEY SHOULD BE READY FOR THE MARKET LATE IN JULY. If you are in the market for some of this FINEST OF ALL honey, write me, giving me an idea of the amount you will need during the coming season. While I cannot promise you honey, this request will go a long ways in helping you to secure your needs. Honey will be offered in 60-lb. cans, two in a WOOD shipping case at a little additional expense to you. Write me your needs. No obligations. Address TOWNSEND SALES COMPANY, Northstar, Michigan.

XUM

PACKAGE BEES AND QUEENS

Leather Colored Italians
Bred for Production

Prices of Package Bees with Queens			
Lots of	2-lb.	3-lb.	Ex. Queen
1 to 24	$4.00	$5.00	$1.25
25 to 99	3.85	4.80	1.10
100 or more	3.75	4.70	1.10

Terms, 25% deposit to book order, balance ten days before shipping date. We replace any bees that die in transit if it is our fault, if it is the carriers' fault, file claim with them. We are now shipping. Old customers will be given preference.

THE ISLAND APIARY

Collier City, Fla.

Pure Italian Queens and Package Bees

• • •

Due to heavy booking we have sold our supply for April and early May shipments. Can accept additional orders for shipment after May 10.

PRICES

Queens 1 to 49 $1.10 50 and up $1.00
2-lb pkg. with queen, $3.45; 50-up, $3.25
3-lb. pkg. with queen, $4.45; 50-up, $4.25
4 lb. pkg. with queen. $5.45; 50-up, $5.25

• • •

HOMAN BROTHERS

R. F. D. 2 Shannon, Miss.

"A CALL FOR HELP"
Will you help us keep our customers happy?
We are appealing to our old and new friends alike:
"Bring in or ship us your Honey"
We need it—B-Z-B jars need it—and the busy housewife needs it.
You help us help them keep up their energy.

B-Z-B Honey Company

361 E. Valley Blvd., ALHAMBRA (Los Angeles County), CALIF.

PACKAGE BEES — ITALIAN QUEENS

Light, 3-Banded Italians reared from queens tested for heavy honey producing. Long life, good winter resistant and gentle. Stock I have been breeding from since 1926 and have made me continuous good customers. Can also furnish queens reared direct from government queen resistant to disease. Also have access to thousands of colonies of Association Members, for large orders, free from disease. War veterans preference and 5 per cent discount.

On all checks under $100 add exchange fees of 10 cents. Over $100 add 20 cents. No exchange on P. O. money orders.

Queens of either stock $1.25
Bees, 2-lb. with queen 3.90
Bees, 3-lb. with queen 4.90
Per extra lb. 1.10

HOMER W. RICHARD

Route 3, Box 252A Phone 1370 El Dorado, Arkansas

ITALIANS

Queens Queens Queens Queens
Proven Production from
TANQUARY'S BEES
Book now for Queens
Good Queens our Specialty
Safe Arrival Guaranteed
Write or telephone your order NOW!

—PRICES—

	1-24	25-49	50-100
2-lb. pkg. with queen	$4.15	$4.05	$4.00
3-lb. pkg. with queen	5.15	5.05	5.00
Extra Queens	1.25	1.20	1.15

Queenless packages, deduct $1.10 per package. After June 1, 15% discount on package bees and queens.

• • •

Tanquary Honey Farms, Inc.

LENA, SOUTH CAROLINA

Pettit's Package Bees

Sold Out For April!

MAY PRICES 1945 U. S. Funds

Quan.	2-lb. pkgs. Qn.	2-lb. pkgs. Without Qn.	3-lb. pkgs. Qn.	3-lb. pkgs. Without Qn.	Ex. Qns.
1-2	4.00	2.75	5.00	3.80	1.25
3-27	3.85	2.65	4.90	3.70	1.20
30-96	3.70	2.55	4.70	3.55	1.15
99 up	3.50	2.40	4.50	3.40	1.10
JUNE PRICES 1945 U. S. Funds					
1-11	3.65	2.65	4.70	3.70	1.00
12-99	3.45	2.55	4.45	3.55	.90
100 up	3.20	2.40	4.20	3.40	.80

Try Pettit's Package Bees without queens to boost those weak colonies or early packages so they really produce honey. Send one dollar per package with order, balance ten days before shipping date. Bees leave here in good order. We replace shipping losses of bees and queens if reported promptly with signature of express agent showing percentage of loss and not blaming us.

MORLEY PETTIT

Tifton, Georgia

ARE YOU WONDERING—

Where are you going to get your PACKAGE BEES and QUEENS for April and May? We can accept your orders for Bees or Queens, and get them to you on time.

2-lb. pkg. bees with queen	$3.50
3-lb. pkg. bees with queen	4.50
Queens, $1.10 or lots of 100 or more	1.00

Our queens are daughters of stock bred for resistance to disease. We guarantee live delivery.

Lucedale Apiaries, Lucedale, Mississippi

PACKAGE BEES FOR MAY AND JUNE

Thanks to satisfied customers, I am booked for April delivery but accepting orders for May and June of light three-banded Italian Bees and Queens. Live delivery guaranteed. No C. O. D. orders accepted.

	2 lbs.	(with queens)	3 lbs.
1-24	$4.00	1-24	$4.80
25-49	3.80	25-49	4.60
50 on up	3.60	50 on up	4.40

Queens, select untested, after May 20, $1.00 each

PLAUCHE BEE FARM

HAMBURG, LOUISIANA

The Monthly Honey Market

SEMI MONTHLY HONEY REPORT SUMMARY

Temperatures over practically the entire country east of the Rocky Mountains were considerably above normal during the middle and latter part of March. Vegetation in this area is abnormally advanced, and is now generally from two to three weeks ahead for this time of year. Deciduous fruit bloomed from two to three weeks early in the Southeast and at the end of the month fruit buds were swelling northward to Michigan, Pennsylvania, and New York. This has resulted in unusually early broodrearing and a rapid build-up of colonies. Danger from later frosts presents a real hazard to fruit growers in the more northern States and also may necessitate heavy feeding of colonies which have built up unusually strong unless heavy early honey flows occur. In most major honey-producing sections of the country bees came through the winter in better than average condition, both from the standpoint of colonies lost and from the standpoint of population strength. Even in the North Central and New England States, which had an unusually long winter with very heavy snows, winter losses are running lighter than previously anticipated. In practically all sections considerable spring feeding will be neces sary. This is partially due to the abnormally early broodrearing and further due to the fact that in many large areas the late fall and winter were milder than usual with the result that consumption of stores was heavy. In most sections moisture conditions and prospects for honey plants are very favorable. South and central Florida and south Texas have been rather dry and fairly large sections in some of the South Atlantic States will require additional rainfall to put plants in good condition.

In the package-bee area of the Gulf Coast States colonies built up unusually early and many were close to swarming strength before the package season began. Many package bees were shipped prior to April 1 which is considered the usual date to begin these shipments. Demand for package bees continues heavy. In some States fairly large numbers of packages will be needed to replace winter losses. Also in some sections many bees were gassed last fall because of the light honey crop last season. Packages will be needed to replace these colonies. Considerable interest is being shown on the part of new beekeepers or amateurs. On the other hand, many large commercial beekeepers are planning no expansion or in some cases are reducing the number of colonies in line with a reduced labor supply. Considerably more interest has been shown in bees for pollination than for many previous years. This is especially true in the fruit districts of California and the Pacific Northwest.

INFORMATION FROM PRODUCING AREAS

(Prices generally refer to sales at wholesale by beekeepers f.o.b. shipping points except as otherwise noted. Dates shown for each section indicate approximate period covered.)

California Points (Period March 7-23)

Southern California. Most of this period was colder than usual for this season of the year, with fairly heavy rainfall in some sections and moderate rainfall in others. Moisture conditions are favorable, but the cool weather has retarded blooming of many spring plants. It now looks like the main citrus flow will become active around the last week in April. Prospects for white sage and buckwheat are very good. Black sage does not appear so favorable. In some sections black sage is beginning to bloom in a limited way. Bees are gathering some pollen and nectar from chaparrel, creosote, cover crop mustard, filaree, willow, black sage, and various early ground flowers. Broodrearing is active and many colonies are building up too rapidly for the available stores, with the result that considerable feeding has been necessary. There has been considerable movement of bees to the citrus areas. Very little honey is available for current shipment. Only an occasional lot is being offered by producers. Sales f.o.b. to beekeepers—per lb., extracted in case to ton lots 12c regardless of flavor or color. Some Mexican and Argentine honey is still being offered in the Los Angeles area.

TOO LATE TO CLASSIFY

SEND FOR CATALOG of electric heaters, thermostats, and supplies for heating your hives next winter. D. F. McFarland, Research Engineer, Solon, Maine.

FOR SALE—400 good used five gallon honey cans, 35c a case. W. Mendenhall, Moorestown, N. J.

HONEY FOR SALE—We buy and sell all varieties. Buckwheat, 12c; new crop Florida honey, 12c. Bizzy Bee Ranch, No. Abington, Mass.

FOR SALE—Up to 1000 colonies, 10-frame. 2 story standard hives for $9.00. Certificate of inspection furnished. Max Maver. 525 Cucamonga Ave., Pomona, California.

ITALIAN QUEENS, good as the best in every respect. Prompt service. $1.10 each; $12.00 per dozen. The Victor Apiaries, 46916 Michigan Ave., R.F.D., Belleville, Michigan.

Italian Bees and Queens

We still have a few packages that are not booked and an unlimited number of queens for the latter part of May and June.

	1-5	6-25	26-up
2-lb. pkg.	$4.00	$3.90	$3.75
3-lb. pkg.	4.85	4.65	4.50
4-lb. pkg.	5.85	5.65	5.50
5-lb. pkg.	6.80	6.60	6.45

Queens, $1.00

Get our line bred Italians noted for their prolificness, livability and vigorousness. Health certificate guaranteed.

B. J. BORDELON APIARIES
Moreauville, La.

Three Band Italian Package Bees

Full weight—Prompt shipment—Young bees. State Health Certificate with each shipment. Live arrival guaranteed. Replacement or refund made promptly upon receipt of bad order from your express agent.

OUR 1945 PRICES

2-lb. pkg. with queen	**$3.70**
3-lb. pkg. with queen	**4.80**
4-lb. pkg. with queen	**5.90**
5-lb. pkg. with queen	**7.00**

Extra queens are $1.10 each. We charge $1.00 extra for introducing the package queens.

Payable in U. S. Funds

We are booked up for this season on extra Untested Queens. If bees are wanted without queens deduct $1.00 from each package.

JACKSON APIARIES

FUNSTON, GA.

American Honey Institute News Notes

The revised and enlarged edition of "Old Favorite Honey Recipes" is in such demand that we want to urge you to get your order for these books in soon. You know that there is a limit to the number we can have printed in one year. Paper is scarce.

The following letter from the food editor of a daily paper with a big circulation is typical of the many received by the Institute:

"With the flood of printed material that sweeps across my desk, it takes something out of the ordinary to arouse my enthusiasm. But the booklet you have just sent me 'Old Favorite Honey Recipes', certainly does it.

"At first glance I was intrigued by the clover cover, the 'cross-stitch' illustrations and the concise forms of the recipes. And the recipes! They are indeed the answer to a food editor's dream in these days of suger shortage.

"Please accept my congratulations for a swell job and my thanks for a booklet that will be of great help in my work."

Blazing a Trail in Woodland Research by Harriett M. Grace in International Altrusan is listed as a "must" in reading in the February, 1945, issue of Vocational Guide.

More than 3,000 teachers of food wrote the Institute for help on honey during the past year.

May 9 - Baker's Day - is a good time to promote bread and honey.

AMERICAN HONEY INSTITUTE

Mrs. Harriett M. Grace, Director

Commercial State Bank Building

Madison 3, Wisconsin

Buy U. S. War Bonds and Stamps

NEEDED SUPPLIES – HARD TO BUY!

(We have them)

No. 14—4 fr. Non-Reversible Extractor, Hand Power	$14.75
No. 6—2 fr. Non-Reversible Extractor, Hand Power	11.75
10 fr. Wire Queen Excluders, wood bound, 5 or more each	.80
25-lb. lots Thin Surplus Foundation (following sizes) 3⅞ x 16 - 4½ x 16½ - 4⅛ x 17¼ - 3 1/16 x 14¼	19.75
25-lb. lots "Hercules" Plain Brood Foundation	17.50
25-lb. lots "Hercules" WIRED Brood Foundation	18.50

Brood Foundation Sizes 8 x 16¾ or 8½ x 16½

HAVE YOU TRIED OUR "HERCULES" WIRED IRONSIDES FOUNDATION?
WITHOUT A DOUBT THE BEST FOUNDATION ON THE MARKET.

100 Sheets	$12.50	
50 Sheets	6.50	8½ x 16½
10 Sheets	1.35	O N L Y

2-lb. Pkg. Bees with Queen (untested - untreated)	$3.50
3-lb. Pkg. Bees with Queen (untested - untreated)	4.50
1 Queen Bee, Ultra Violet Ray Treated each	1.25
Wire Face Bee Veil each	.80
Bee Escapes each	.12
Smokers 4 x 7 each	1.00
2" Hive Staples per lb.	.30
COMB HONEY SECTIONS	
No. 1 Grade 4¼ x 4¼ x 1⅞ per 500	6.60
No. 2 Grade 4¼ x 4¼ x 1⅞ per 500	5.90
No. 1 Grade 4¼ x 4¼ x 1⅞ split 3 sides per 500	7.10
Cellophane Wrappers for above sections per 100 sheets	1.25
Cellophane Wrappers for above sections per 500 sheets	5.50
1 lb. Glass Honey Jars, packed 2 doz. per case	1.00
2 lb. Glass Honey Jars, packed 1 doz. per case	.90
5 lb. Glass Honey Jars, packed ½ doz. per case	.55
5 lb. Friction Top Cans, packed 50 per carton	3.75
10 lb. Friction Top Cans, packed 50 per carton	5.00
Bee Gloves per pair	.75

TERMS: CASH WITH ORDER, F. O. B. CINCINNATI
WE WILL BUY YOUR HONEY AND BEESWAX AND PAY THE CEILING PRICES.
NO LOT TOO SMALL OR TOO LARGE. WRITE US.
We also render wax from your old comb or cappings and work your wax into comb foundation. Write for our general price list.

THE FRED W. MUTH COMPANY

229 WALNUT ST. CINCINNATI, OHIO

These Are Difficult Days

We appreciate your writing to us for ROOT QUALITY BEE SUPPLIES. In some cases we have been able to fill the orders but labor conditions are such that the factory cannot manufacture all that is needed. Your ROOT QUALITY equipment is valuable because of its years of satisfactory service. We are doing everything possible to get all you need. Perhaps when your order arrives we can ship. Thanks for your cooperation.

A. I. Root Co. of Indianapolis
121 N. Alabama St., Indianapolis, Ind.

A. I. Root Co. of Syracuse
1112 Erie Blvd., Syracuse 3, N. Y.

The A. I. Root Co. of Iowa
Council Bluffs, Iowa

A. I. Root Co. of Chicago
224 W. Huron St., Chicago 10, Ills.

The A. I. Root Company, 12 W. 21st St., New York 10, N. Y.

Send for free catalog—hundreds more!

—GOT A HOBBY?--

Keep up with the latest developments in your field. Here's a group of magazines that specialize in a particular subject! Send your subscription today!

Gleanings in Bee Culture, $1. per year
Beekeepers' Item, $1.
American Bee Journal, $1.

DAIRYING
American Dairy Goat News, m., $1.
Dairy Farmers' Digest, $1.
Dairyland News, s. m., 50c.

FARMING
The Country Book, quarterly, $1.
Farmers' Digest, m., $2.

FRUIT
Better Fruit, m., $1.
Eastern Fruit Grower. $1.

LIVESTOCK
Berkshire (Hog) News, m., $1.
Chester White (hog) News, m., $1
Southeastern Cattleman, $1.
Pacific Stockman, $1.
The Sheepman, $1.
Arizona Stockman, m., $1.50
Plantation Stockman, m., $2
Coastal Cattleman, m., $1.

HORSES
The Horse, bi-monthly, breeding, schooling, training, horse sports, $5.
Thoroughbred (Horse) Record, w., $4.
Rider and Driver, m., horse-sport-pleasure, $3.50
Spokesman & Harness World, m., $1.

PIGEONS
American Pigeon Journal, Squab-fancy, $1.50
Pigeon News, fancy only, $1.50

RABBITS
Small Stock (rabbits, cavies), $1.
American Rabbit Journal, m., $1.
Inter. Comm. Rabbit Journal, (Angora) $1.

OTHER SPECIALTIES
The Soybean Digest, $1.50
New Agriculture (sugar beets only) $
Small Com. Animals & Fowls, 50c
Co-operative (Farmers) Digest, $2
Modern Game Breeding, m., pheasants, $3.
Black Fox Mag., m., fox, mink, $2
Frontiers (natural history) 5 issues, $1
Canary Journal, m., $2.
Tailwagger, m., (Dogs) $2.50.
Eagle Mail Order News, m., $1.
Good Health, m., $1.
Canary World, m., $1.25.

All magazines are monthlies unless otherwise noted; prices are for one fu year. Satisfaction guaranteed. All orders are handled promptly and acknowledged. Rush your subscription today Remit in any way convenient to you

MAGAZINE MART

Dept. G B Plant City, Florid
Sample copies at single copy prices.

BEEKEEPERS ITEM

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